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Sediment Data

Alberta

Données sur les sédiments

1988

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WATER RESOURCES BRANCH
WATER SURVEY OF CANADA
OTTAWA, CANADA, 1990

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PREFACE

This publication was prepared by personnel of the Sediment Survey Section, Water Survey of Canada Division, under the direction of the Director, Water Resources Branch, Department of the Environment, Ottawa.

The basic data were collected and compiled under the supervision of the Chief, N.W.T. Programs, Yellowknife, Northwest Territories and the Regional Chief of the Water Resources Branch at Vancouver, British Columbia.

The co-operation received from provincial agencies and from other organizations is gratefully acknowledged.

PRÉFACE

Le groupe d'étude des sédiments de la Division des relevés hydrologiques du Canada, sous l'autorité du directeur des Ressources en eau du ministère de l'Environnement, à Ottawa, a préparé la présente publication.

Le Chef des programmes des T.N.-O., à Yellowknife (Territoires du Nord-Ouest) et le chef régional de la Direction des ressources en eau, à Vancouver (Colombie-Britannique), ont supervisé la collecte et la compilation des données de base.

Nous remercions vivement les organismes provinciaux, ou autres, pour leur collaboration.

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INTRODUCTION

The Water Resources Branch of the Department of the Environment herein presents for the **1988** calendar year the annual suspended sediment data and a historical data summary for the sediment survey investigations conducted in Alberta by the Water Survey of Canada.

Data on the character and quantity of fluvial sediments provided by sediment survey investigations are intended for use in studies of water quality, environmental impacts, river processes and behaviour, and engineering design.

General introductory information on the sediment survey is included in this publication. Similar information for the associated hydrometric survey is given in the regular publications containing surface water data.

Details on individual stations and related records, as well as recent data that have not yet been published, may be obtained upon application to:

Water Resources Branch,
Department of the Environment,
Bag 2909,
Postal Station 'M',
(Room 854,
220-4th Avenue S.E.),
Calgary, Alberta.
T2P 2M7
(403 292-5315)

or to the Water Resources Branch, Department of the Environment, Ottawa, Ontario, K1A 0H3 (819 997-2098).

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INTRODUCTION

Dans la présente publication de la Direction des ressources en eau du ministère de l'Environnement, on trouvera les données annuelles sur les sédiments en suspension pour **1988** et le commaire des données chronologiques sur les sédiments, à la suite des études effectuées dans les cours d'eau de l'Alberta par la Division des relevés hydrologiques du Canada.

Les données recueillies sur la nature et l'importance de la charge solide dans les cours d'eau doivent servir aux études portant sur la qualité des eaux, les incidences environnementales, les processus fluviaux, le comportement des cours d'eau et la conception de projets.

La presente publication contient des renseignements généraux préliminaires sur les études des sédiments. Des renseignements semblables sur les études hydrométriques connexes sont contenus dans les publications régulières présentant des données sur les eaux de surface.

On peut obtenir des renseignements supplémentaires sur les stations et les relevés, ainsi que des données récentes non encore publiées, en s'adressant au:

Direction des ressources en eau
Ministère de l'Environnement
Sac postal 2909
Succursale postale 'M'
(Pièce 854,
220, Quatrième avenue S.-E.)
Calgary (Alberta)
T2P 2M7
(403 292-5315)

ou au Direction des ressources en eau, ministère de l'Environnement, Ottawa (Ontario), K1A 0H3 (819 997-2098).

SCOPE OF PUBLICATION

Descriptive information about sediment stations is given. This refers to the Location, Latitude and Longitude, Drainage Area and whether the flow is Natural Flow or Regulated Flow (the year that regulation began is given, if known), Type of Gauge and the Total Suspended Sediment Load in Tonnes for the Period of Record is also included. International Gauging Stations are identified and the names of co-operating agencies who supply data are given; unusual conditions at the sediment station that could affect the data results are explained under "Remarks".

This publication contains data on streamflow, instantaneous suspended sediment concentration; daily mean suspended sediment concentration; daily suspended sediment loads; dissolved solids concentration; load summary; particle-size distribution of suspended sediment in percent sand, silt and clay; bed load and bed material; water temperature when samples were collected; type of sampler and the single sampling vertical location.

A historical sediment data summary includes such information as Sampled Concentration Maximum and Minimum; Suspended Sediment Load Maximum Daily and the Total for Period. The Period of Record and the Type of Operation for each year of data are also given. A Summary for the Months of record gives the Period of Record Mean, the Mean for Period of Record and the Standard Error of Mean as a percent.

HISTORY AND OBJECTIVES OF SEDIMENT SURVEYS IN CANADA

In Canada, investigations of sediment transported by streams were first undertaken by individual organizations or agencies in 1948, to meet the needs of federal and provincial agencies for assessment of particular projects. Although the investigations were extended to meet expanding needs after 1948, it was not until 1961 that a systematic survey was undertaken by the Water Resources Branch.

The sediment survey program has the following objectives:

(1) Collection and provision of data related to sediment transport in Canadian rivers for applications in water resource engineering, water quality and environmental studies.

(2) Provision of information and advice related to sediment transport.

(3) Assessment, improvement and standardization of equipment and techniques used in Canada's sediment survey program.

PUBLICATION OF SEDIMENT DATA

Sediment data have been published in a variety of formats since the beginning of the Sediment Survey Program.

PORTÉE DE LA PUBLICATION

Des données descriptives sont présentées sur les stations d'étude des sédiments. Elles concernent leur emplacement, leurs latitude et longitude, leur bassin versant, la nature de débit (naturel ou régularisé, avec indication, le cas échéant, de l'année où la régularisation a commencé, si elle est connue), le type d'instrument de mesure employé et le débit total des sédiments en suspension (en tonnes) pour la période de relevé. Les stations internationales de jaugeage sont indiquées, ainsi que le nom des organismes qui fournissent les données. Des explications concernant des conditions exceptionnelles qui ont pu influer sur les résultats sont présentées dans la partie «Remarques».

Cette publication renferme des données sur le débit des cours d'eau, les concentrations instantanées de sédiments en suspension, les concentrations journalières moyennes de sédiments en suspension, les débits journaliers de sédiments en suspension, les concentrations de matières dissoutes, les débits solides totaux (résumés), la granulométrie des sédiments en suspension exprimée en pourcentage de sable, de limon et d'argile, le charriage et les matériaux du lit, la température de l'eau au moment de l'échantillonnage, le type d'échantillonneur employé et l'emplacement des verticales de prélèvement d'échantillons uniques.

Un résumé des données historiques sur les sédiments est inclus. On y trouve divers renseignements comme les concentrations maximale et minimale mesurées, le débit journalier maximal des sédiments en suspension et le total pour la période. La période de relevé et le type d'exploitation des stations sont indiqués pour chaque année. Dans un résumé pour les mois de relevé, on donne la moyenne pour chaque période et pour l'ensemble des périodes de relevé ainsi que l'erreur-type de la moyenne, en pourcentage.

HISTORIQUE ET OBJECTIFS DES ÉTUDES DES SÉDIMENTS AU CANADA

Au Canada, les études dans ce domaine ont débuté en 1948 en réponse aux besoins exprimés par certains organismes fédéraux et provinciaux pour l'évaluation de projets donnés et étaient le fait d'organismes privés. Bien que les études se soient poursuivies après 1948 pour satisfaire aux besoins accrus, ce n'est qu'en 1961 que la Direction des ressources en eau les a entreprises de façon systématique.

Les buts de ces études sont de:

(1) réunir et produire des données sur les transports solides dans les cours d'eau canadiens, données dont on peut avoir besoin pour des études concernant l'environnement, la qualité des eaux et la conception de projets portant sur les ressources en eau.

(2) produire des informations concernant les transports solides.

(3) évaluer, améliorer et uniformiser le matériel et les techniques employés dans le programme d'étude des sédiments au Canada.

PUBLICATION DES DONNÉES SUR LES SÉDIMENTS

Depuis le début du programme d'étude des sédiments, la présentation des données a varié.

During the years 1948 to 1960, some sediment data were collected for several Prairie rivers to meet the needs of particular projects. The first Water Resources Paper series containing sediment data incorporated a selection of these data and also data for part of the year ending September 30, 1961, at stations established for the continuing program. The second issue was a biennial publication covering only the continuing program for the 1962 and 1963 water years. All subsequent editions titled *Sediment Data Canadian Rivers* have been published annually. The sediment data since 1978 have been presented entirely in the International System of Units (SI).

Commencing with 1984, the *Sediment Data* were published in a new format wherein Canada was divided into eight regions. The provinces each represent a separate region except for New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island, which together form the Atlantic Provinces region, and the Yukon and Northwest Territories which make up another. The publications are identified by the province or territories covered and the year in which the data were collected. These data are published annually on a calendar-year basis and the stations are listed alphabetically.

A new edition, *Miscellaneous Sediment Data 1966 to 1983*, was published. It contains a tabulation of locations in Canada where miscellaneous data were collected but not previously published by the Water Survey of Canada. The following data are included in this one time publication: date and time of sample collection; instantaneous discharge or daily mean discharge; sampling vertical; instantaneous concentration; dissolved solids for some samples; type of sampler used; particle size distribution of suspended sediment in percent sand, silt and clay for some depth integrated samples and/or measurements, and some point integrated measurements; particle size distribution of bed load; particle size distribution of bed material; and the water temperature at time of sampling for some samples is also given where available.

The first edition of a *Sediment Data Reference Index* was published for data to 1972. It contains a tabulation of locations in Canada where sediment data were collected by the Water Survey of Canada. The index has been subdivided alphabetically by province or territory, with sediment survey stations also listed alphabetically. Commencing with the 1978 publication, data are presented in the International System of Units (SI) and will continue to be published biennially. The latest edition supersedes all previous editions because it contains any corrections or additions since the last publication.

The first edition of a new publication series titled *Historical Sediment Data Summary for Canadian Rivers* was produced for data to 1974. This publication contains a summary of historical monthly and annual mean suspended sediment load, and annual extremes of daily suspended sediment concentration and loads and total annual suspended load. Commencing with the 1978 publication, data are presented entirely in the International System of Units (SI). This publication has been discontinued, as much of the information is now included in the new annual *Sediment Data* publication.

De 1948 à 1960, on a recueilli des données pour plusieurs cours d'eau des Prairies en prévision de la réalisation de certains projets. La première publication contenant des données sur les sédiments a paru dans la série intitulée *Water Resources Paper*; elle présentait un choix de ces données ainsi que des données recueillies en 1961 avant le 30 septembre à des stations établies pour la réalisation du programme permanent. La deuxième publication a porté sur les données recueillies dans le cadre du programme au cours des années hydrologiques 1962 et 1963. Par la suite, les données ont été publiées annuellement sous le titre *Données sur les sédiments - rivières canadiennes*. Depuis 1978, les données sont exprimées en unités du Système international (SI).

En 1984, la présentation des *Données sur les sédiments* a été modifiée. Le Canada a été divisé en huit régions, une région pour chaque province, sauf le Nouveau-Brunswick, Terre-Neuve, la Nouvelle-Écosse et l'Île-du-Prince-Édouard qui, ensemble, forment la région des provinces de l'Atlantique, et les Territoires du Yukon et du Nord-Ouest, qui forment une autre région. Les publications sont nommées selon la région couverte et l'année des données (année civile). Ces publications sont annuelles. Les stations y sont présentées par ordre alphabétique.

Une édition récente intitulée *Données diverses sur les sédiments, 1966 à 1983* vient de paraître. On y présente sous forme de tableau les emplacements où des données diverses non encore publiées ont été recueillies au Canada par la Division des relevés hydrologiques. Cette première édition comprend des données telles que : la date et la durée de l'échantillonnage; le débit instantané ou débit journalier moyen; la verticale d'échantillonnage; les concentrations instantanées; les concentrations de matières solides en solution pour certains échantillons; le type d'échantillonneur employé; la granulométrie des sédiments en suspension en pourcentage de sable, de limon et d'argile, dans le cas de mesures avec intégration selon la profondeur ou d'échantillons intégrés sur toute la profondeur, et dans le cas de mesures par la méthode ponctuelle; la granulométrie du charriage; la granulométrie des matériaux du lit; la température de l'eau lors du prélèvement d'échantillons, lorsque celle-ci est connue.

Un *Index de référence des données sur les sédiments* est publié. La première édition portait sur les données disponibles jusqu'en 1972. Les emplacements où des données sur les sédiments ont été recueillies au Canada par la Division des relevés hydrologiques y sont présentés sous forme de tableau. L'*Index* est subdivisé selon l'ordre alphabétique par province ou territoire, et les stations de mesure des sédiments sont classées par ordre alphabétique. À partir de 1978, les données sont exprimées en unités du Système international (SI). L'*Index* est publié tous les deux ans; l'édition la plus récente annule toutes les éditions antérieures, car elle renferme toutes les corrections et mises à jour effectuées depuis la dernière parution.

Une autre série de publications a porté le titre *Sommaire chronologique des données sur les sédiments de rivières canadiennes*. La première édition renfermait les données disponibles jusqu'en 1974. Cette série présentait un résumé donnant les moyennes mensuelles et annuelles historiques du débit des sédiments en suspension, les valeurs annuelles extrêmes de la concentration journalière et du débit journalier des sédiments en suspension et le débit annuel total des sédiments en suspension. À partir de 1978, les données ont été présentées en unités du Système international (SI). Cette série a été abandonnée, car une bonne partie de l'information est maintenant contenue dans la nouvelle publication annuelle intitulée *Données sur les sédiments*.

COLLECTION AND PROCESSING OF BASIC DATA

1. *Equipment and Instrumentation*

The sediment survey program of the Water Resources Branch is conducted in cross sections on rivers selected specifically for the sediment survey or for the hydrometric survey. Certain cross sections are located at traffic bridges, while others are equipped with cableways, or automatic pump samplers.

The following sediment samplers have been used in the sediment survey program:

(a) Depth-integrating suspended sediment wading-type hand sampler, USDH-48, used on small streams or during winter periods.
(b) Depth-integrating suspended sediment sampler, USDH-59, used as a handline suspension for small and medium size streams.
(c) Depth-integrating suspended sediment samplers, USD-49, and USD-74, used on a reel suspension for medium and large streams whose depths are less than five metres.
(d) Point-integrating suspended sediment samplers, USP-61, USP-61-A1, USP-63, and USP-72, used for point-integrating sampling, or depth-integrating sampling if the depth is over five metres, or in a cross section with velocities up to two metres per second.
(e) Automatic pump sampler is an automatic pumping system permitting unattended collecting and bottling of individual water samples pumped from a fixed point in a stream. This sampler is normally installed at isolated locations where otherwise no data would be available during ice break-up or peak periods.
(f) Bed material sampler, USBM-54, used on large or deep streams or on those streams with hard-packed streambeds.
(g) Bed material sampler, USBMH-60, used on some large or deep streams or on those streams with soft-packed streambeds.
(h) Bed material sampler, USBMH-53, used on some small or shallow streams.
(i) Lane bed material sampler, a drag-type sampler used on small streams or those with soft streambeds.

2. *Hydrometric Surveys*

The hydrometric survey includes the standard procedures for observations of water levels, streamflow measurements, water surface slope determinations if required, and observations of water temperature. The streamflow measurements are made in conjunction with the sediment load measurements and conform to the accepted standards of the regular hydrometric survey.

3. *Sediment Sampling Program*

The following is a summary of the elements associated with the Sediment Sampling Program:

(a) Periodic measurement of suspended sediment load by the

COLLECTE ET TRAITEMENT DES DONNÉES DE BASE

1. *Matériel*

L'étude des sédiments réalisée par la Direction des ressources en eau porte sur des sections transversales de cours d'eau choisis spécialement à cette fin ou pour les relevés hydrométriques. Certaines sections sont situées sous un pont, d'autres sont accessibles par téléphérique, ou sont étudiées à l'aide d'un échantillonneur sous pression.

On a utilisé les échantillonneurs suivants:

(a) L'échantillonneur intégrateur selon la profondeur, type simple, USDH-48, employé dans les cours d'eau peu profonds ou en hiver;
(b) L'échantillonneur intégrateur selon la profondeur USDH-59, utilisé comme une ligne dans les cours d'eau petits et moyens;
(c) Les échantillonneurs intégrateurs selon la profondeur USD-49 et USD-74 fixés au bout d'une corde s'enroulant autour d'un moulinet et employés dans les cours d'eau gros ou moyens dont la profondeur est inférieure à cinq mètres;
(d) Les échantillonneurs intégrateurs USP-61, USP-61-A1, USP-63 et USP-72, employés ponctuellement ou sur toute la verticale, et utilisés lorsque la profondeur est supérieure à cinq mètres ou dans les sections transversales qui connaissent un débit qui atteint 2 m/s.
(e) Un échantillonneur automatique permettant le prélèvement en bouteilles, sans surveillance, d'échantillons uniques d'eau obtenus à l'aide d'une pompe en un point précis d'un cours d'eau; il est ordinairement installé dans un endroit isolé où aucune donnée ne pourrait être obtenue autrement au cours de la débâcle ou des périodes de débit de pointe;
(f) L'échantillonneur USBM-54 employé pour le prélèvement d'échantillons des matériaux du lit dans les cours d'eau importants ou profonds ou dans les cours d'eau dont le fond est dur;
(g) L'échantillonneur USBMH-60 employé pour le prélèvement d'échantillons des matériaux du lit dans certains cours d'eau importants ou profonds, ou dans les cours d'eau dont le fond est meuble;
(h) L'échantillonneur USBMH-53 employé pour le prélèvement d'échantillons des matériaux du lit dans certains cours d'eau petits ou peu profonds;
(i) La drague employée pour le prélèvement d'échantillons des matériaux du lit dans de petits cours d'eau ou dans des cours d'eau dont le fond est meuble.

2. *Relevés hydrométriques*

Le relevé hydrométrique comprend, entre autres, l'observation de la hauteur des eaux, la mesure du débit de l'eau, la détermination de la pente de la ligne d'eau, si nécessaire, ainsi que l'observation de la température de l'eau. Les mesures du débit de l'eau et du débit des sédiments se font conjointement, suivant les méthodes acceptées.

3. *Échantillonnage des sédiments des cours d'eau*

L'échantillonnage comporte, en gros, les éléments suivants:

(a) La mesure périodique du débit des sédiments en suspension par la méthode d'intégration sur toute la profondeur

depth-integrating method for determining the average suspended sediment concentration in the cross section.

(b) Single suspended sediment samples at a selected vertical for determining the sediment concentration for the days when suspended sediment load measurements are not taken.

(c) Limited measurement of suspended sediment load by the point-integrating method for checking depth-integrated measurements and for determining particle-size distribution in the cross section.

(d) Sampling of bed material for determining particle-size distribution.

(e) Periodic measurement of bed load.

The following is a brief explanation of the elements listed above:

(a) *Suspended Sediment Load by Depth-Integrating Method*: Measurements are made by the depth-integrating method to determine the suspended sediment load in the entire cross section of a stream, the average suspended sediment concentration in the cross section, and the size distribution of the sediment particles. It is known that the concentration of suspended sediment tends to increase from the water surface to the streambed and could vary from streambank to streambank.

When making suspended sediment equal-discharge-increment (EDI) measurements, the stream cross section is divided into at least five equal-flow panels and a representative suspended sediment sample is collected from each portion. For each panel of the cross section, the suspended sediment load (r) may then be computed by multiplying the flow (q) by the suspended sediment concentration (c):

$$r = q\ c$$

The suspended sediment load (R) for the cross section may be computed by adding the sediment loads for the five equal-flow panels:

$$R = r\ n = q_1c_1 + q_2c_2 + \ldots + q_nc_n$$

The depth-integrating method of sampling is used to measure the suspended sediment concentration. This method is based on the premise that the sampler fills at a rate proportional to the velocity of the approaching flow, and that by traversing the depth of a stream at a uniform speed, the sampler will receive a portion of water sediment mixture at every point in the vertical.

(b) *Single Suspended Sediment Samples at a Selected Vertical*: Single suspended sediment samples, consisting of two bottles each, are collected routinely using the depth or point-integrating samplers at a permanently fixed vertical in a cross section. During periods of very heavy sediment concentration, two or three single sediment samples may be taken per day, while during periods of low concentration, one single sediment sample may only be taken every few days. During extremely low flow periods, the sampling may be limited to one single sample in several weeks or months.

(c) *Suspended Sediment Load by Point-Integrating Method*: A limited number of suspended sediment load measurements are made by the point-integrating method. These measurements are included in the program (a) to check by comparison the "measured" sediment loads obtained by the depth-integrating method with the suspended sediment loads by the point-integrating method and (b) to obtain samples from which to determine particle-size distribution

pour la détermination de la concentration moyenne dans une section transversale;

(b) Le prélèvement d'échantillons uniques des sédiments en suspension selon une verticale choisie, afin de déterminer la concentration des sédiments les journées où le débit des sédiments en suspension n'est pas mesuré;

(c) Un nombre restreint de mesures du débit des sédiments en suspension avec intégration en un point précis d'un cours d'eau, afin de vérifier les résultats des mesures avec intégration selon la profondeur et afin de déterminer la granulométrie des particules de sédiments dans une section transversale d'un cours d'eau;

(d) L'échantillonnage des matériaux du lit afin d'en déterminer la granulométrie;

(e) La mesure périodique du charriage.

Voici une brève description des éléments susmentionnés.

(a) *Mesure du débit des sédiments en suspension par intégration selon la profondeur*: La méthode permet de déterminer le débit des sédiments en suspension traversant toute une section transversale d'un cours d'eau, la concentration moyenne des sédiments en suspension dans la section transversale et la granulométrie des sédiments en suspension. C'est un fait connu que la concentration des sédiments en suspension augmente généralement avec la profondeur et qu'elle peut varier d'une rive à l'autre d'un cours d'eau.

Avec la méthode d'incréments de débits égaux (IDE), la mesure du débit des sédiments en suspension se fait en divisant une section transversale d'un cours d'eau en au moins cinq tranches où le débit est égal et en prélevant un échantillon représentatif dans chacune d'elles. Le débit des sédiments en suspension (r) pour chaque tranche se calcule en multipliant le débit (q) par la concentration des sédiments en suspension (c):

$$r = q\ c$$

Le débit des sédiments en suspension (R) pour la section transversale est la somme des débits des sédiments des cinq tranches:

$$R = r\ n = q_1c_1 + q_2c_2 + \ldots + q_nc_n$$

La méthode par intégration sur toute la profondeur est employée pour mesurer la concentration des sédiments en suspension. Elle suppose que l'échantillonneur se remplit à un rythme proportionnel au débit de l'eau et qu'en étant déplacé à une vitesse uniforme sur toute la verticale, il reçoit une partie du mélange eau-sédiments à tous les points de celle-ci.

(b) *Prélèvement d'échantillons uniques de sédiments en suspension sur une verticale choisie*: De tels échantillons, constitués chacun de deux bouteilles, sont prélevés régulièrement à l'aide d'appareils intégrateurs, selon la profondeur ou ponctuels, sur une verticale permanente d'une section transversale. Lorsque la concentration des sédiments est très forte, deux ou trois échantillonnages peuvent être effectués chaque jour, alors qu'un seul échantillon peut être prélevé à quelques jours d'intervalle lorsqu'elle est faible. Au cours des périodes où le débit est extrêmement faible, l'échantillonnage peut être limité à un échantillon toutes les quelques semaine ou tous les quelques mois.

(c) *Mesure du débit des sédiments en suspension par la méthode ponctuelle*: Un nombre limité de mesures du débit des sédiments en suspension sont faites avec cette méthode. On y a recours a) pour vérifier les valeurs du débit mesurées au moyen de la méthode précédente et b) pour obtenir des échantillons en vue de déterminer la granulométrie des sédiments en divers points de la

at different points in the cross section. The point-integrating sediment loads are computed by graphical methods.

The relationship between the suspended sediment concentration of the single vertical samples and the average concentration in the cross section determined from the suspended sediment load measurements is established for some stations. Using this relationship, the sediment concentrations of the single vertical samples are adjusted to reflect the average suspended sediment concentration in the cross section. These average sediment concentrations in the cross sections are plotted, and a smooth curve is drawn through the points to obtain a concentration graph. This graph represents the average suspended sediment concentration for the period of record. The daily mean concentrations are determined by automated procedures using a digitizer interfaced with a Digital minicomputer.

The daily suspended sediment loads are computed on the basis of stream discharges and the collected suspended sediment concentrations. The daily suspended sediment loads are expressed in tonnes per day and are obtained by multiplying the daily mean sediment concentration (mg/L), by the daily mean discharge (m^3/s), and the conversion factor, 0.0864.

(d) *Bed Material Sampling*: In a cross section, bed material samples are usually taken in the same sampling verticals as the suspended sediment samples. Often, additional bed material samples are collected at the water edge, the extreme water level or at other points in the cross section. The total number of bed material samples taken in a cross section usually varies between five and nine.

(e) *Bed Load Measurement*: There are several methods available for measurement of bed load (volumetric method, measurement by samplers, method of tracers, method of constricted cross section, study of sound waves, etc.). The measurement methods should be selected in accordance with river regime.

4. *Total Sediment Load*

Sediment transport may be divided into two categories: sediment maintained in suspension in the stream (suspended load), and sediment being carried along the streambed (bed load). To measure the total sediment load, each of these must be measured separately and then totalled. The total sediment load was not computed for this publication.

5. *Sediment Survey Laboratories*

The Water Resources Branch maintain sediment survey laboratories in New Westminster, British Columbia; Regina, Saskatchewan; Guelph, Ontario; and Moncton, New Brunswick. The laboratories are equipped to perform the following analyses:

(a) determination of sediment concentration by (1) filtration method, (2) evaporation method and (3) determination of total dissolved solids by evaporation method.
(b) particle-size distribution analysis by (1) bottom withdrawal tube method, (2) sieving and (3) hydrometer method.

Determination of the sediment concentration by the evaporation method is carried out by evaporating the water from the settled sediment sample, with the results being corrected for dissolved solids. The quantity of dissolved solids is determined by evaporating a portion of the decanted water of a sample. In the filtration method, the suspended sediment concentration of water samples is determined by utilizing Gooch crucibles with a Reeve Angel 934AH filter and a Millipore AP20 prefilter and a vacuum system.

section transversale. Cette méthode fait appel à des graphiques pour le calcul du débit des sédiments.

Le rapport entre la concentration des sédiments en suspension dans les échantillons prélevés sur une seule verticale et la concentration moyenne dans la section transversale, telle que déterminée à partir des mesures du débit des sédiments en suspension, est établi pour quelques stations. Il permet de corriger les concentrations mesurées à une seule verticale de manière à donner la concentration moyenne dans la section transversale. Les concentrations moyennes ainsi déterminées sont reportées sur un graphique, et une courbe lisse passant par les points marqués est tracée. Le graphique obtenu représente la concentration moyenne des sédiments en suspension pour la période de relevé. Les concentrations moyennes quotidiennes sont déterminées automatiquement à l'aide d'un convertisseur analogique-numérique relié à un mini-ordinateur numérique.

Les valeurs journalières du débit des sédiments en suspension sont calculées à partir du débit du cours d'eau et des concentrations des sédiments en suspension recueillis. Elles sont exprimées en tonnes par jour. On les détermine en multipliant la concentration moyenne journalière des sédiments (mg/L) par le débit moyen journalier (m^3/s) et par un facteur de conversion approprié, 0.0864.

(d) *Échantillonnage des matériaux du lit*: Dans une section transversale, les échantillons des matériaux du lit sont ordinairement prélevés aux mêmes verticales que ceux des sédiments en suspension. Souvent, des échantillons supplémentaires sont pris près des rives, là où le niveau d'eau est extrême et à d'autres points de la section transversale. Leur nombre total pour une section donnée varie ordinairement entre cinq et neuf.

(e) *Mesure du charriage*: La mesure peut se faire par plusieurs méthodes (méthode volumétrique, mesure à l'aide d'échantillonneurs, méthode des traceurs, méthode de la section transversale rétrécie, étude des ondes sonores, etc.). Le choix se fondera sur la nature du régime du cours d'eau.

4. *Débit solide total*

Il y a deux catégories de sédiments: les sédiments maintenus en suspension au sein de l'eau (sédiments en suspension), et les sédiments charriés sur le lit d'un cours d'eau (charriage de fond). Les deux types de sédiments doivent être mesurés séparément et leurs valeurs additionnées si on veut mesurer le débit total des sédiments. Toutefois, on ne l'a pas calculé aux fins de la présente publication.

5. *Laboratoires d'analyse*

La Direction des ressources en eau possède des laboratoires d'analyse des sédiments à New Westminster (Colombie-Britannique), Regina (Saskatchewan), Guelph (Ontario) et Moncton (Nouveau-Brunswick). Les laboratoires disposent des appareils nécessaires pour effectuer les analyses suivantes:

(a) la détermination de la concentration des sédiments par (1) filtration, (2) évaporation, et (3) détermination des matières dissoutes totales par évaporation.
(b) l'analyse granulométrique (1) par extraction des sédiments déposés dans un tube, (2) par l'emploi de tamis et (3) par l'utilisation d'un hydromètre.

La méthode par évaporation consiste à faire évaporer l'eau d'un échantillon de sédiments décanté et à corriger les résultats pour tenir compte des matières dissoutes. La quantité de celles-ci est déterminée en faisant évaporer une partie de l'eau de l'échantillon décanté. Dans la méthode par filtration, on utilise sous vide des creusets de Gooch munis d'un filtre Reeve Angel 934AH et d'un préfiltre Millipore AP20.

Particle-size analysis was carried out for some suspended sediment samples having gross weights in the range of 0.15 to 5 g using the Bottom Withdrawal Tube method. The particle-size distribution of the Bottom Withdrawal Tube method ranges from 0.002 to 1.000 mm. The Sieve analysis method may be used for samples with a large amount of material coarser than 0.062 mm.

The particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)
Clay	0.000 24 - 0.004
Silt	0.004 - 0.062
Sand	0.062 - 2.0
Gravel	2.0 - 64.0

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analyzed in distilled water. Chemical dispersion is not used for native-water analysis.

6. *Accuracy and Reliability of Field Data and Computed Results*

The overall accuracy and degree of reliability of the sediment data is dependent upon many factors. Some of the more important of these are:

(a) accuracy and reliability of streamflow records;
(b) regime of the river;
(c) type of sampling equipment used to collect the suspended sediment samples;
(d) frequency of suspended sediment discharge measurements;
(e) frequency of individual sampling;
(f) quality of the relationship between the average suspended sediment concentration in the cross section and the concentration of the individual samples;
(g) frequency and method of bed material sampling;
(h) frequency and method of bed load measurements;
(i) accuracy and reliability of the laboratory analysis;
(j) selected methods of computation of the suspended sediment discharge;
(k) interpretation and extrapolation of sediment records.

An assessment of the quality of the records can be made by an examination of the occurrence of the symbol (S) on the daily mean concentrations.

In general, data collected during open-water periods are more reliable than those collected during periods of ice conditions or those records obtained by estimation. Further, water level data collected utilizing a water-stage recorder are more reliable and accurate than those using a manual gauge only, especially for small or flashy streams.

Une analyse granulométrique a été effectuée pour certains échantillons de sédiments en suspension ayant un poids brut dans l'intervalle de 0.15 à 5 g par la méthode de la burette (extraction des sédiments déposés, à divers intervalles). La distribution de la taille des particules déterminée par cette méthode varie de 0.002 à 1.000 mm. La méthode de tamisage peut être employée pour les échantillons ayant une forte quantité de particules de taille supérieure à 0.062 mm.

La classification granulométrique qui est utilisée dans la présente publication est conforme aux recommandations faites par l'*American Geophysical Union Subcommittee on Sediment Terminology*. La classification est la suivante:

Classification	Taille (mm)
Argile	0.000 24 - 0.004
Limon	0.004 - 0.062
Sable	0.062 - 2.0
Gravier	2.0 - 64.0

La répartition granulométrique qui est fournie dans cette publication, n'est pas obligatoirement représentative de toutes les particules qui sont transportées par un cours d'eau donné. La plupart des matières organiques sont extraites de l'échantillon qui est ensuite soumis à une dispersion mécanique et chimique avant d'être analysé dans de l'eau distillée. La dispersion chimique ne sert pas à l'analyse de l'eau naturelle.

6. *Exactitude des données et des résultats*

L'exactitude des données sur les sédiments dépend de nombreux facteurs. On peut citer, parmi les plus importants:

(a) l'exactitude des données sur les débits;
(b) le régime d'un cours d'eau;
(c) le type d'appareil d'échantillonnage utilisé pour prélever les échantillons de sédiments en suspension;
(d) la fréquence des mesures du débit des sédiments en suspension;
(e) la fréquence des échantillonnages isolés;
(f) la qualité du rapport entre la concentration moyenne des sédiments en suspension dans une section transversale et la concentration des échantillons isolés;
(g) la fréquence des échantillonnages des matériaux de fond et la méthode utilisée;
(h) la fréquence des mesures du charriage de fond et la méthode utilisée;
(i) l'exactitude des analyses de laboratoire;
(j) les méthodes de calcul du débit des sédiments en suspension;
(k) l'interprétation et l'extrapolation des données sur les sédiments.

La qualité des données peut être évaluée d'après la fréquence d'utilisation du symbole (S), avec les données sur la concentration journalière moyenne.

En général, les données recueillies au cours des périodes d'eau libre sont plus sûres que celles qui sont obtenues au cours des périodes de glaces ou par estimation. De plus, les données sur le niveau des eaux qui sont mesurées à l'aide d'un limnigraphe sont plus certaines et plus exactes que celles qui sont mesurées à l'aide d'une jauge manuelle seulement, surtout dans le cas des petits cours d'eau ou des cours d'eau à crues très rapides.

METHOD OF TABULATION OF SEDIMENT DATA

For stations where the suspended sediment load was obtained, the following data are given where available:

1. The table of *Suspended Sediment Load* includes the daily mean discharge in cubic metres per second, the daily mean concentration in milligrams per litre, and the daily suspended sediment load in tonnes per day. The total monthly discharge and total monthly sediment load are also given for each month of record.

   For stations where the sediment load in tonnes per day are produced for complete or partial years, the *Total Suspended Load* for the period is given in the descriptive information.

   For stations where only suspended sediment concentrations are obtained, the table of *Suspended Sediment Load* will not be given.

   Additional descriptive information about the sediment station is also given and will indicate the following, where applicable.

   Location – the latitude and longitude co-ordinates of the location of the gauge are given. For stations where the gauge is located an appreciable distance from the discharge measurement section, these co-ordinates give the location of the discharge measurement section.

   Drainage area – refers to that area enclosed by a topographic divide such that direct surface runoff from precipitation would drain by gravity into the stream upstream from the location of the station.

   Type of Flow – where the flow is known to be natural, this is indicated. The flow of water in many river systems is affected by upstream regulation. In some cases, the extent of this regulation is not known and therefore is not indicated. However, where the regulation is known to be "appreciable", this is indicated as well as the year that the regulation began, if known.

   Type of Gauge – refers to the installation or method used to obtain water level or discharge data:

   (a) Manual – a non-recording type of gauge from which observations of stage normally are obtained once daily.

   (b) Recording – a water-stage recorder from which continuous water levels are obtained on an analog chart. For most International Gauging Stations located in the United States, water level records are obtained utilizing a digital recorder.

   International Gauging Station – on waters adjacent to the international boundary, certain gauging stations have been

PRÉSENTATION DES TABLEAUX DE DONNÉES SUR LES SÉDIMENTS

Pour les stations de mesure du débit des sédiments en suspension, les données suivantes sont présentées, pour autant qu'elles sont disponibles:

1. Le tableau concernant le *débit des sédiments en suspension* (The table of Suspended Sediment Load) donne le débit journalier moyen de l'eau, en mètres cubes par seconde, la concentration journalière moyenne, en milligrammes par litre, et le débit journalier des sédiments en suspension, en tonnes par jour. Chaque mois les données indiquent également les débits mensuels totaux de l'eau et des sédiments.

   Dans le cas des stations où le débit des sédiments, en tonnes par jour, est fourni pour une année complète ou une partie de l'année, le total pour la période est indiqué.

   Dans le cas des stations où seule la concentration des sédiments en suspension est obtenue, ce tableau est absent.

   Des renseignements descriptifs additionnels au sujet de la station sont également présentées. On peut y apporter les précisions suivantes:

   Emplacement (Location) – La latitude et la longitude de la station de jaugeage sont indiquées. Dans les cas où l'équipement de mesure est situé à une bonne distance de la section où le jaugeage est effectué, on indique les coordonnées de cette section.

   Superficie du bassin versant (Drainage area) – Désigne la zone délimitée par une ligne de faîte de sorte que l'écoulement de surface direct provenant des précipitations est entraîné par gravité vers le cours d'eau, en amont de la station.

   Type de débit (Type of Flow) – Un débit reconnu comme naturel est indiqué. Le débit de nombreux réseaux hydrographiques est modifié par une régularisation effectuée en amont. Dans certains cas, l'importance de cette régularisation n'est pas connue, et elle n'est donc pas indiquée. Cependant, quand on sait que la régularisation est d'une certaine importance, on l'indique, ainsi que l'année où elle a débuté (si elle est connue).

   Type de jauge (Type of Gauge) – Il s'agit des jauges ou des méthodes de jaugeage utilisées pour obtenir les données sur le niveau ou le débit d'un cours d'eau.

   (a) *Manuel* (Manual) – Indique qu'un appareil non enregistreur est employé pour obtenir normalement une fois par jour les données sur le niveau et le débit du cours d'eau.

   (b) *Enregistreuse* (Recording) – Indique qu'un limnigraphe permet de mesurer de façon continue le niveau des eaux qui est tracé sur un graphique. La plupart des stations internationales de jaugeage aux États-Unis obtiennent les données sur le niveau des eaux à l'aide d'un enregistreur numérique.

   Station internationale de jaugeage (International Gauging Station) – Dans les eaux contiguës aux frontières, on a

designated as "International" and records are approved jointly. Differences between figures published herein and corresponding figures in United States Water Supply Papers are due to variations in automated data processing techniques.

Contributed Data – if data were supplied in their entirety or partially by an outside agency, the name of this co-operating agency is given.

Remarks – contains a statement pertaining to the sediment sample collection.

2. The table of *Instantaneous Suspended Sediment Concentration* for depth-integrating samples includes the following: Date and Time of the sample collection; Water Temperature; Instantaneous Discharge at time of sampling, (if not available the daily mean discharge is given and indicated by a symbol); Single Sampling Vertical location; Dissolved Solids; Percent Sand, Silt and Clay; Type of Sampler used. The particle-size distribution in percent in millimetres and the percent Sand, Silt and Clay, is given where available.

The Single Sampling Vertical Location is defined by many symbols, which are as follows, where applicable:

DIGITS - 5, 14, 130, etc., is the distance in metres from the initial point
WERB - Water's Edge RIGHT Bank
WELB - Water's Edge LEFT Bank
1QRB - One-quarter the distance FROM the RIGHT Bank
3QRB - Three-quarters the distance FROM the RIGHT Bank
1QLB - One-quarter the distance FROM the LEFT Bank
3QLB - Three-quarters the distance FROM the LEFT Bank
MID - MID STREAM
MULT - Composite sediment measurement

For the suspended sediment measurements, the Date; Time; Water Temperature at time of sampling; Discharge computed for each sampling panel; Concentration; Sampling Vertical; Dissolved Solids; Percent Sand, Silt and Clay; Type of Sampler used; and the Particle-size distribution of the Sand, Silt and Clay, in percent is given where available.

3. The table of *Split Vertical Suspended Sediment* for depth-integrating samples includes the following: Date and Time of the sample collection; Water Temperature; Instantaneous Discharge at time of sampling, (if not available the daily mean discharge is given and indicated by a symbol); Sampling Vertical; Depth of Sample (giving the depth sampled from and the depth sampled to); Concentration of Sample, in milligrams per litre, Dissolved solids, in milligrams per litre; and the Particle-size distribution in percent in millimetres and the percent Sand, Silt and Clay are also given.

désigné certaines stations comme «internationales», et les données obtenues sont approuvées par les pays concernés. Les différences entre les chiffres publiés dans la présente publications et dans les *United States Water Supply Papers* sont dues à des variantes dans les techniques de traitement automatique des données.

Données fournies (Contributed Data) – Lorsqu'un organisme extérieur a fourni toutes les données ou une partie des données, son nom est indiqué.

Remarques (Remarks) – Renseignements au sujet du prélèvement des échantillons de sédiments.

2. Le tableau des *concentrations instantanées de sédiments en suspension* (The table of Instantaneous Suspended Sediment Concentration) pour les échantillons obtenus par intégration selon la profondeur comprend: la date et l'heure de prélèvement; la température de l'eau; son débit instantané au moment de l'échantillonnage (s'il n'est pas connu, le débit journalier moyen, avec symbole); l'emplacement de la verticale d'échantillonnage; la concentration des matières dissoutes; les pourcentages de sable, de limon et d'argile; le type d'échantillonneur employé; et la granulométrie du sable, du limon et de l'argile, en pourcentage en millimètres et le pourcentage des particules est donné lorsqu'il est disponible.

Le site vertical d'échantillonnage unique est défini par plusieurs symboles dont les suivants dans certains cas :

CHIFFRE - 5, 14, 130, etc., désigne la distance en mètres à partir du point initial
WERB - Bord de l'eau, rive DROITE
WELB - Bord de l'eau, rive GAUCHE
1QRB - Un quart de la distance À PARTIR de la rive DROITE
3QRB - Trois quarts de la distance À PARTIR de la rive DROITE
1QLB - Un quart de la distance À PARTIR de la rive GAUCHE
3QLB - Trois quarts de la distance À PARTIR de la rive GAUCHE
MID - MI-DÉBIT
MULT - Mesure des sédiments mixtes

Pour les mesures des sédiments en suspension, la date, l'heure, la température de l'eau au moment de l'échantillonnage, le débit calculé pour chaque tranche de la section d'échantillonnage, la concentration et la verticale d'échantillonnage, la concentration des matières dissoutes; les pourcentages de sable, de limon et d'argile; le type d'échantillonneur employé; et la granulométrie du sable, du limon et de l'argile, en pourcentage des particules est donnée lorsqu'elle est disponible.

3. Le tableau des *sédiments en suspension fractionnés pris à la verticale* (The Table of Split Vertical Suspended Sediment) pour les échantillons obtenus par intégration selon la profondeur comprend les éléments suivants : la date et l'heure de l'échantillonnage; la température de l'eau; le débit instantané au moment de l'échantillonnage (s'il n'est pas disponible, on donne le débit moyen quotidien et on l'indique par un symbole), la verticale d'échantillonnage; la profondeur (donner la profondeur à laquelle l'échantillon a été pris); et la profondeur à laquelle l'échantillon a été attributé la concentration des échantillons, en milligrammes par litre; la concentration des matières dissoutes, en milligrammes par litre; la distribution des sédiments de la taille de particules en pourcentage en millimètres; le pourcentage de sable, de limon et d'argile.

4. The table of *Point Integrating Particle-size of Suspended Sediment* includes the following: Date and Time of the sample collection; Water Temperature; Panel Discharge for each sampling vertical; Sampling Vertical; Depth of Sample; Concentration of Sample, in milligrams per litre; Dissolved Solids in milligrams per litre, and the Particle-size distribution in percent in millimetres and the percent Sand, Silt and Clay are also given.

5. The table of *Bed Load Particle-size* includes the following: Date and Time of the sample collection; Panel Discharge; Sampling Vertical and the Type of Sampler used in the collection of the sample and the Particle-size distribution, in percent in millimetres, for each sample of bed load collected.

6. The table of *Bed Material Particle-size* includes the following: Date and Time of the sample collection; Panel Discharge; Sampling Vertical and the Type of Sampler used in the collection of the sample and the Particle-size distribution, in percent in millimetres, for each sample of bed material collected.

7. The table of *Historical Sediment Data Summary* gives the following, for the period of record, where applicable.

   (a) Record Summary
   (b) Type of Sampling
   (c) Sampled Concentration, maximum and minimum
   (d) Suspended Sediment Load, maximum daily and the total, for the period, in tonnes
   (e) Summary, including mean load, the historical mean load and the standard error of the mean in percent.

(a) The *Record Summary* gives the months of record that data are available. If the complete month is on file the symbol (C) is shown, while partial months of data are indicated by the symbol (P). Months with no data on file are indicated by (-).

(b) The *Type of Sampling* indicates the type of sampling method used to collect the sediment samples during the period of operation. If the samples were collected by manual methods this is indicated by "MANUAL." If the samples were collected by a pump sampler or some other automatic method this is indicated by "AUTO." If both manual and automatic sampling methods were used this is indicated by "DUAL."

(c) The *Sampled Concentration* gives the maximum and minimum concentration, in milligrams per litre, and the date of collection for each year of record. The extreme recorded for the period of record is indicated by an asterisk (*). If more than one maximum or minimum, of the same value, occurred during the year only the date of the first occurrence is identified by the asterisk.

(d) The *Suspended Sediment Load* gives the maximum daily load, in tonnes, and the date of occurrence. The extreme recorded is indicated by an asterisk (*). The Total for the Period gives

4. Le tableau de la *granulométrie des échantillons ponctuels et intégrés des sédiments en suspension* (The table of Point Integrating Particle-size of Suspended Sediment) comprend: la date et l'heure de prélèvement de l'échantillon, la température de l'eau, le débit de la tranche de la section pour chaque verticale d'échantillonnage, la verticale d'échantillonnage, la profondeur de l'échantillon, la concentration des échantillons, en milligrammes par litre, la concentration des matières dissoutes, en milligrammes par litre, et granulométrie en millimètres et en pourcentage du sable, du limon et de l'argile.

5. Le tableau de la *granulométrie des sédiments charriés* (The table of Bed Load Particle-size) comprend: la date et l'heure de prélèvement de l'échantillon, le débit de la tranche de la section, la verticale d'échantillonnage et le type d'échantillonneur employé et le pourcentage en millimètres des particules pour chaque échantillon recueilli du charriage.

6. Le tableau de la *granulométrie des matériaux du lit* (The table of Bed Material Particle-size) comprend: la date et l'heure de prélèvement de l'échantillon, le débit de la tranche de la section, la verticale d'échantillonnage et le type d'échantillonneur employé et le pourcentage en millimètres des particules pour chaque échantillon recueilli.

7. Le tableau du *sommaire chronologique des données sur les sédiments* (The table of Historical Sediment Data Summary) donne, pour la période pour laquelle les données sont disponibles, les renseignements suivants lorsque de telles données existent:

   (a) Le sommaire du relevé
   (b) Le type d'échantillonnage
   (c) Les concentrations mesurées, maximum et minimum
   (d) Le débit des sédiments en suspension, maximum quotidien et le total pour la période en tonnes
   (e) Résumé, comprend le débit moyen, le débit moyen chronologique et l'erreur type de la moyenne en pourcentage.

(a) Le *sommaire du relevé* donne les mois de relevé pour lesquels les données sont disponibles. Le symbole (C) indique que les données sont disponibles pour tout le mois. Le symbole (P) indique que ces données ne sont disponibles que pour une partie du mois. Enfin, on indique par (-) les mois qui n'ont pas de données.

(b) Le *type d'échantillonnage* indique le type de méthode d'échantillonnage que l'on utilise dans le prélèvement des échantillons de sédiments pendant la période d'exploitation. Si le prélèvement des échantillons se fait par des méthodes manuelles, on indique «MANUEL». Si le prélèvement des échantillons se fait au moyen d'échantillonneur à pompe ou par quelque autre méthode automatique, on indique «AUTO». Si on utilise à la fois des méthodes d'échantillonnage manuelles et automatiques, on indique «DOUBLE».

(c) Pour les *concentrations mesurées* (Sampled Concentration), on donne la concentration maximale et la concentration minimale, en milligrammes par litre, et leur date d'obtention pour chaque année de relevé. La valeur extrême enregistrée est indiquée par un astérisque (*). Si la valeur du maximum ou du minimum a été mesurée plus d'une fois pendant l'année, on signale, par l'astérisque, seulement la date de la première mesure.

(d) Sous le *débit des sédiments en suspension* (Suspended Sediment Load), on donne le débit journalier maximal, en tonnes, et sa date de mesure. Le débit extrême enregistré est indiqué

the total load for the period or year, in tonnes. The extreme recorded is also indicated by an asterisk (*). If more than one maximum or minimum, of the same value, occurred during the year only the date of the first occurrence is identified by the asterisk. A load which has been revised since the previous publication is marked with the symbol (R) for Revision.

(e) The *Summary* gives the *Mean Load* and the *Historical Mean Load* in tonnes.

The *Standard Error of the Mean* % is calculated using the following equations:

$$SEM = \frac{S}{\bar{x}\sqrt{n}} \times 100\%$$

and

$$S = \sqrt{\frac{\Sigma (x - \bar{x})^2}{n - 1}}$$

where SEM is the Standard Error of the Mean.

- S is the Standard Deviation of the annual mean loads.
- x is the annual Mean Load variable.
- $\bar{x}$ is the Historical Mean Load or the arithmetic mean of the annual Mean Loads.
- n is the number of years for which there is an annual Mean Load.

For stations with only instantaneous samples, this table will not include the *Suspended Sediment Load* or the statistical information in the *Summary*.

DEFINITION OF TERMS

The following definitions are given to clarify the terms used in this publication:

Automatic pump sample is an individual water-sediment mixture pumped from a fixed point in a stream.

Bed load is that material moving in almost continuous contact with the streambed, being rolled or pushed along the bottom by the force of the water.

Bed material is the sediment mixture of which the streambed is composed.

Daily load is the suspended sediment load expressed in tonnes for a particular day. The daily load is obtained by multiplying the daily mean sediment concentration (mg/L) by the daily mean discharge (m^3/s) and the conversion factor, 0.0864.

Daily mean concentration is a time-weighted mean value and is computed from a manually constructed concentration curve. The mean concentration value may be determined arithmetically or graphically. The arithmetic mean is obtained either by (1) selecting values from the concentration graph that represents uniform intervals of time and taking the arithmetic average or by (2) selecting values from the graph that represent unequal intervals of time and weighing these values by the

par un astérisque (*). Le débit total pour la période ou pour l'année est indiqué. La valeur extrême est également signalée par un astérisque (*). Si la valeur du maximum ou du minimum a été mesurée plus d'une fois pendant l'année, on signale, par l'astérisque, seulement la date de la première mesure. La lettre R indique qu'une valeur du débit a été révisée depuis la dernière publication.

(e) Le *résumé* donne le *débit moyen* et le *débit moyen chronologique*, en tonnes.

L'*erreur-type de la moyenne* % (Standard Error of the Mean), est calculée à l'aide des équations suivantes:

$$SEM = \frac{S}{\bar{x}\sqrt{n}} \times 100\%$$

et

$$S = \sqrt{\frac{\Sigma (x - \bar{x})^2}{n - 1}}$$

où SEM est l'erreur type de la moyenne.

- S est l'écart type des débits moyens annuels.
- x est la variable du débit moyen annuel.
- $\bar{x}$ est le débit moyen chronologique ou la moyenne arithmétique des débits moyens annuels.
- n est le nombre d'années où il y a un débit moyen annuel.

Dans le cas des stations ne prélevant que des échantillons instantanés, ce tableau ne donnera pas le *débit des sédiments en suspension* ni les données statistiques du *résumé*.

DÉFINITION DES TERMES

Les définitions suivantes sont présentées afin de faciliter la compréhension des termes utilisés dans la présente publication:

Échantillonnage automatique à l'aide d'une pompe (Automatic pump sample): Prélèvement d'un mélange de sédiments et d'eau au moyen d'une pompe fonctionnant automatiquement, en un point précis d'un cours d'eau.

Charriage (Bed load): Matières roulées ou poussées sur le fond sous l'action de l'eau, mais restant en contact presque permanent avec le fond.

Matériau du lit (Bed material): Mélange de sédiments composant le lit d'un cours d'eau.

Débit journalier des sédiments en suspension (Daily load): Débit des sédiments en suspension exprimé en tonnes par jour, pour une journée donnée. On l'obtient en multipliant la concentration journalière moyenne des sédiments (mg/L) par le débit journalier moyen de l'eau (m^3/s) et le facteur de conversion 0.0864.

Concentration journalière moyenne (Daily mean concentration): Moyenne pondérée en fonction du temps, calculée à partir d'une courbe de la concentration établie manuellement. La valeur de la concentration moyenne peut être déterminée arithmétiquement ou graphiquement. Pour la déterminer arithmétiquement, on peut, soit choisir sur la courbe des valeurs représentant des intervalles uniformes de temps et faire la moyenne arithmétique, soit choisir sur cette courbe

time intervals represented by the concentrations. For graphical explanation refer to *Office Procedures for Sediment Data Computations* and for the automated graphical explanation refer to *Automated Hydrometric Computation Procedures.*

Depth-integrated sediment sample is a suspended sediment sample collected at a single vertical in a cross section in a sampler moving vertically at a constant transit rate and represents an average sample for that part of the depth ranging from the water surface to about nine centimetres above the streambed.

Instantaneous suspended sediment sample is a sample collected at a fixed vertical in a river cross section.

Measured suspended sediment discharge is the suspended sediment discharge that can be computed from stream discharge and the concentration of sediment determined from depth-integrated sediment samples.

Particle-size analysis is the process of determining the size distribution of particles in a sediment sample.

Point-integrated sediment sample is a sample of the water-sediment mixture taken over a specified period of time at a fixed point and depth in a river cross section.

Sediment is fragmental material which has been deposited, eroded or transported by a flowing stream.

Sediment hydrograph is a graph showing the variation of suspended sediment concentration or sediment discharge with respect to time.

Single sample is a sample taken at a selected permanent vertical in a cross section. Two bottles of water-sediment mixture make up each single sample.

Single sampling vertical is a selected permanent vertical in a cross section in which single suspended sediment samples are collected.

Suspended sediment is sediment that moves in suspension in water either as a colloid or through the influence of the upward component of turbulent currents.

Suspended sediment concentration is the ratio of the weight of dry solids in a water-sediment mixture to the volume of the mixture. The units of this ratio are "milligrams per litre" (mg/L).

Suspended sediment load is the quantity of suspended sediment transported through a cross section per unit of time.

des valeurs qui représentent des intervalles inégaux de temps et pondérer ces valeurs en fonction des intervalles de temps correspondants. En ce qui concerne les méthodes graphiques, consulter *Méthodes de bureau pour les calculs de données sur les sédiments* et, pour la méthode automatisée, *Automated Hydrometric Computation Procedures.*

Échantillon intégré sur toute la profondeur (Depth integrated sediment sample): Échantillon des sédiments en suspension prélevé sur une verticale précise d'une section transversale d'un cours d'eau à l'aide d'un échantillonneur se déplaçant verticalement à une vitesse constante; il représente un échantillon moyen des matières en suspension entre la surface de l'eau et environ 9 cm du fond.

Échantillon instantané de sédiments en suspension (Instantaneous suspended sediment sample): Échantillon prélevé à une verticale précise d'une section transversale d'un cours d'eau.

Débit mesuré des sédiments en suspension (Measured suspended sediment discharge): Débit des sédiments en suspension qui peut être calculé à partir du débit du cours d'eau et de la concentration des sédiments déterminée à partir d'échantillons intégrés sur toute la profondeur.

Analyse granulométrique (Particle-size analysis): Détermination de la répartition de la taille des particules dans un échantillon de sédiments.

Échantillon ponctuel et intégré (Point-integrated sediment sample): Échantillon constitué d'un mélange d'eau et de sédiments, prélevé au cours d'une période de temps donnée en un point précis d'une section transversale d'un cours d'eau et à une profondeur donnée.

Sédiments (Sediment): Matières fragmentaires qui ont été déposées, érodées ou transportées par un cours d'eau.

Hydrogramme des sédiments (Sediment hydrograph): Graphique représentant la variation de la concentration des sédiments en suspension ou du débit des sédiments en fonction du temps.

Échantillon unique (Single sample): Échantillon prélevé sur une verticale permanente particulière dans une section transversale. Deux bouteilles du mélange eau-sédiments constituent un seul échantillon.

Verticale d'échantillonnage unique (Single sampling vertical): Verticale permanente d'une section transversale où des échantillons uniques de sédiments en suspension sont prélevés.

Sédiments en suspension (Suspended sediment): Matériaux qui se déplacent au sein de l'eau, soit sous forme colloïdale, soit sous l'influence des forces ascendantes des courants turbulents.

Concentration des sédiments en suspension (Suspended sediment concentration): Rapport entre le poids des matières solides sèches contenues dans un mélange eau-sédiments et le volume du mélange. Les unités employées sont les «milligrammes par litre» (mg/L).

Débit des sédiments en suspension (Suspended sediment load): Quantité de sédiments en suspension transportés par unité de temps à travers une section transversale d'un cours d'eau.

Total sediment load is the sum of the suspended sediment load and the bed load.

Unmeasured sediment load is the difference between total sediment load and measured suspended sediment load.

DEFINITION OF SYMBOLS

Symbols are located at the bottom of the data sets under the headings Time, Discharge, Concentration, and Dissolved Solids. The symbols with their definitions are listed below.

Time Symbol

E – *Estimated* – indicates estimated data. It indicates that the time of sample collection is estimated by some indirect method or comparison with other stream data.

Discharge Symbol(s)

A – *Manual Gauge* – indicates that one or more manual gauge observations per day were obtained and used as the mean for the day for a gauging station equipped with a recording gauge. This symbol is used during open-water periods only.

B – *Ice Conditions* – indicates the presence of ice at the gauging station. For gauging stations where discharge data are obtained, this symbol indicates that the presence of ice has affected the stage-discharge relationship.

E – *Estimated* – indicates estimated data. It indicates that the values recorded are estimated by some indirect method such as interpolation, extrapolation, comparison with other streams or by comparison with meteorological data.

H – *Daily Mean Discharge* – is the mean discharge for a particular day, usually referred to as the "daily mean discharge".

V – *Daily Mean; Manual Gauge* – is the mean discharge for a particular day and indicates that one or more manual gauge observations per day were obtained and used as the mean for the day.

W – *Daily Mean; Ice Conditions* – is the mean discharge for a particular day and indicates that the presence of ice has affected the stage-discharge relationship.

Y – *Daily Mean; Estimated* – is the mean discharge for a particular day and indicates that the value has been estimated by some indirect method.

Concentration Symbol(s)

C – *Coarse Material Present* – indicates that during the laboratory analysis coarse material (sand) was observed in the sediment sample.

Débit total des sédiments (Total sediment load): Somme du débit des sédiments en suspension et du débit charrié.

Débit non mesuré des sédiments (Unmeasured sediment load): Différence entre le débit total des sédiments et le débit mesuré des sédiments en suspension.

DÉFINITION DES SYMBOLES

Les symboles figurent au bas des séries de données et sont traités sous les rubriques Temps, Débit, Concentration, Matières solides en solution. Ces symboles avec leurs définitions sont donnés dans la liste ci-après.

Symbole du temps :

E – *Estimative* – Indique des données estimatives, c'est-à-dire que l'heure de prélèvement de l'échantillon est évaluée de façon indirecte ou par comparaison avec d'autres données sur les cours d'eau.

Symbole(s) du débit :

A – *Turbidisonde simple* – Indique qu'on a effectué à une station de jaugeage dotée d'une turbidisonde enregistreuse au moins une observation par jour à l'aide d'une turbidisonde simple et qu'on s'en est servi comme moyenne pour la journée en question. Le symbole n'est employé qu'au cours des périodes d'eau libre.

B – *Glaces* – Indique la présence de glaces à la station de jaugeage, qui ont faussé la relation hauteur-débit.

E – *Estimative* – Indique des données estimatives, c'est-à-dire que les valeurs enregistrées sont évaluées de façon indirecte, par exemple par interpolation, extrapolation, ou par comparaison avec d'autres cours d'eau ou avec des données météorologiques.

H – *Débit journalier moyen* – Débit moyen pour une journée donnée, ordinairement appelé «débit journalier moyen».

V – *Débit journalier moyen; turbidisonde simple* – Débit moyen pour une journée donnée; indique qu'on a effectué au moins une observation par jour et qu'on s'en est servi comme moyenne pour la journée en question.

W – *Débit journalier moyen; glaces* – Débit moyen pour une journée donnée; indique que la présence de glaces a faussé la relation hauteur-débit.

Y – *Débit journalier moyen; estimative* – Débit moyen pour une journée donnée; indique que la valeur a été évaluée de façon indirecte.

Symbole(s) de la concentration :

C – *Sable grossier présent* – Indique qu'au cours de l'analyse en laboratoire on a observé du sable grossier dans un échantillon de sédiments.

F – Sample Bottle Filled – indicates that during the laboratory analysis it was observed that the sample bottle had been filled to capacity.

G – Organic Material Present – indicates that during the laboratory analysis it was observed that organic material was collected in the sample bottle.

Single Vertical Symbol(s)

K – Sampling vertical not at the regular single vertical from LEFT bank – indicates that a sample was collected at a location from the left bank, in a cross-section, which is not at the regular single vertical.

L – Sediment measurement vertical not at the regular measurement cross-section from LEFT bank – indicates that the measurement sampling verticals were established from the left bank, in a cross-section which is not the regular measurement cross-section.

M – Sediment measurement vertical – indicates that the sampling vertical is one of several, usually five, and represents a panel width. The instantaneous discharge represents the flow for a panel width.

X – Sampling vertical not at the regular single vertical – indicates that a sample was collected at a location, in a cross-section, which is not at the regular single vertical. The location of the regular single vertical is given at the bottom of the Instantaneous Suspended Sediment data.

Z – Sediment measurement vertical not at the regular measurement cross-section – indicates that a suspended sediment measurement was collected in a cross-section which is not the regular measurement corss-section.

Note: If no symbol is present the samples have then been collected at the regular Single Vertical.

MICROFICHE

Sediment data to 1983 are available on microfiche, upon request. The data are stored in station number order by province. There are 270 frames per microfiche at 48X reduction; there is a visible heading showing the fiche number, type of data, province, beginning and ending station number and year of data, and the month/year the fiche was created. The last frame is an index of the contents of that fiche.

F – Flacon d'échantillonnage rempli – Indique qu'au cours de l'analyse en laboratoire on a observé que le flacon d'échantillonnage avait été complètement rempli.

G – Substance organique présente – Indique qu'au cours de l'analyse en laboratoire on a observé qu'une substance organique a été prélevée dans le flacon d'échantillonnage.

Symbole(s) de la verticale unique :

K – Verticale d'échantillonnage à l'extérieur de la verticale unique habituelle à partir de la rive GAUCHE – Indique qu'un échantillon a été prélevé à un endroit à partir de la rive gauche, dans une section transversale, mais à l'extérieur de la verticale unique habituelle.

L – Verticale de mesure des sédiments, à l'extérieur de la section transversale de mesure habituelle à partir de la rive GAUCHE – Indique que les verticales de mesure d'échantillonnage ont été établies à partir de la rive gauche, dans un section transversale à l'extérieur de la section transversale de mesure habituelle.

M – Verticale de mesure des sédiments – Indique que la verticale d'échantillonnage est l'une de plusieurs verticales, en général cinq, et qu'elle représente la dimension d'une tranche. Le débit instantané représente le débit relatif à la dimension d'une tranche.

X – Verticale d'échantillonnage à l'extérieur de la verticale unique habituelle – Indique qu'un échantillon a été prélevé à un endroit, dans une section transversale, mais à l'extérieur de la verticale unique habituelle. L'endroit de la verticale unique habituelle est donné à la fin des données sur les sédiments en suspension instantanés.

Z – Verticale de mesure des sédiments, à l'extérieur de la section transversale de mesure habituelle – Indique qu'une mesure de sédiments en suspension a été prise dans une section transversale à l'extérieur de la section transversale de mesure habituelle.

Note : S'il n'y a pas de symbole, cela indique que les échantillons ont été prélevés à la verticale unique habituelle.

MICROFICHE

Les données jusqu'à 1983 sur les sédiments sont disponibles sur microfiche. Ces données sont emmagasinées par ordre de numéro de station et par province. Chaque microfiche renferme 270 pages réduites de 48X. L'en-tête indique le numéro de la fiche, le genre de données, la province, le numéro de la première et de la dernière station, la première et la dernière année des données ainsi que le mois et l'année de création de la fiche. La dernière image donne l'index de la fiche.

EQUIVALENTS OF MEASURE

The following list of convenient equivalents of measure includes the relationship between imperial units and the International System of Units (SI).

1 inch equals 2.54 cm (centimetres)
1 foot equals 0.3048 m (metre)
1 statute mile equals 1.6093 km (kilometres)

1 cm (centimetre) equals 0.393 70 inch
1 m (metre) equals 3.2808 feet
1 km (kilometre) equals 0.621 37 mile

1 acre equals 43 560 square feet
1 acre equals 0.404 69 ha (hectare)
1 square mile equals 640 acres
1 square mile equals 2.5900 km^2 (square kilometres)
1 square mile equals 259.0 ha (hectares)

1 ha (hectare) equals 10 000 m^2 (square metres)
1 ha (hectare) equals 2.4710 acres
1 km^2 (square kilometre) equals 0.386 10 square mile

1 cubic foot equals 6.2288 imperial gallons
1 imperial gallon equals 4.546 09 L (litres)
1 imperial gallon equals 1.2010 U.S. gallons
1 U.S. gallon equals 0.133 68 cubic foot
1 cubic foot equals 0.028 317 m^3 (cubic metre)
1 m^3 (cubic metre) equals 35.315 cubic feet
1 dam^3 (cubic decametre) equals 1000 m^3 (cubic metres)
1 dam^3 (cubic decametre) equals 1 mm (millimetre) over 1 km^2 (square kilometre)

1 cubic foot per second for one day equals 1.9835 acre-feet
1 cubic foot per second for one day covers one square mile to a depth of 0.037 19 inch
1 acre-foot equals 1.2335 dam^3 (cubic decametres)
1 m^3/s (cubic metre per second) for one day equals 86.4 dam^3 (cubic decametre)
1 m^3/s (cubic metre per second) for one day covers one square kilometre to a depth of 0.0864 m (metre)

1 foot per second equals 0.6818 mile per hour
1 mile per hour equals 1.467 feet per second
1 m/s (metre per second) equals 3.6 km/h (kilometre per hour)
1 km/h (kilometre per hour) equals 0.2778 m/s (metre per second)

1 cubic foot per second equals 0.028 317 m^3/s (cubic metre per second)
1 m^3/s (cubic metre per second) equals 35.315 cubic feet per second

1 pound equals 0.453 59 kg (kilogram)
1 kg (kilogram) equals 2.2046 pounds

1 short ton (2000 pounds) equals 0.907 18 t (tonne)
1 t (tonne) equals 2204.6 pounds

degrees Celsius = 5/9 (degrees Fahrenheit - 32)
degrees Fahrenheit = 9/5 (degrees Celsius) + 32

ÉQUIVALENCES DES UNITÉS DE MESURE

Voici une liste des unités de mesure impériales et leurs équivalences dans le Système international d'unités (SI).

1 pouce vaut 2.54 cm (centimètres)
1 pied vaut 0.3048 m (mètre)
1 mille terrestre vaut 1.6093 km (kilomètre)

1 cm (centimètre) vaut 0.393 70 pouce
1 m (mètre) vaut 3.2808 pieds
1 km (kilomètre) vaut 0.621 37 mille

1 acre vaut 43 560 pieds carrés
1 acre vaut 0.404 69 ha (hectare)
1 mille carré vaut 640 acres
1 mille carré vaut 2.5900 km^2 (kilomètres carrés)
1 mille carré vaut 259.0 ha (hectares)

1 ha (hectare) vaut 10 000 m^2 (mètres carrés)
1 ha (hectare) vaut 2.4710 acres
1 km^2 (kilomètre carré) vaut 0.386 10 mille carré

1 pied cube vaut 6.2288 gallons impérials
1 gallon impérial vaut 4.546 09 L (litres)
1 gallon impérial vaut 1.2010 gallon américain
1 gallon américain vaut 0.133 68 pied cube
1 pied cube vaut 0.028 317 m^3 (mètre cube)
1 m^3 (mètre cube) vaut 35.315 pieds cubes
1 dam^3 (décamètre cube) vaut 1000 m^3 (mètres cubes)
1 dam^3 (décamètre cube) vaut 1 mm (millimètre) qui couvre 1 km^2 (kilomètre carré)

1 pied cube par seconde pendant un jour vaut 1.9835 acre-pied
1 pied cube par seconde pendant un jour couvre un volume d'un mille carré par 0.037 19 pouce
1 acre-pied vaut 1.2335 dam^3 (décamètre cube)
1 m^3/s (mètre cube par seconde) pour un jour vaut 86.4 dam^3 (décamètres cubes)
1 m^3/s (mètre cube par seconde) pour un jour couvre un kilomètre carré à une profondeur de 0.0864 m (mètre)

1 pied par seconde vaut 0.6818 mille par heure
1 mille par heure vaut 1.467 pied par seconde
1 m/s (mètre par seconde) vaut 3.6 km/h (kilomètres par heure)
1 km/h (kilomètre par heure) vaut 0.2778 m/s (mètre par seconde)

1 pied cube par seconde vaut 0.028 317 m^3/s (mètre cube par seconde)
1 m^3/s (mètre cube par seconde) vaut 35.315 pieds cubes par seconde

1 livre vaut 0.453 59 kg (kilogramme)
1 kg (kilogramme) vaut 2.2046 livres

1 tonne courte (2000 livres) vaut 0.907 18 t (tonne)
1 t (tonne) vaut 2204.6 livres

degrés Celsius = 5/9 (degrés Fahrenheit - 32)
degrés Fahrenheit = 9/5 (degrés Celsius) + 32

CO-OPERATION AND ACKNOWLEDGMENTS

Co-operative undertakings with other agencies form an important part of the activities of the Water Survey of Canada. Close co-operation has been maintained with public agencies and private organizations concerned with water resources. Data have been mutually exchanged and suspended sediment collection operations have been facilitated by the assistance received from a number of organizations.

On waters adjacent to the International Boundary, certain sediment stations are maintained by Canada (or the United States) under agreement with the United States (or Canada) and the records are collected and compiled in a manner equally acceptable to both countries. These stations are designated as "International Gauging Stations" in this publication.

For the valuable assistance and co-operation received in obtaining sediment survey records, the Water Survey of Canada is indebted to other federal and provincial organizations which are noted as contributing agencies in the summary for the year. A list of these agencies may be found in the *Sediment Data Reference Index*.

COOPÉRATION ET REMERCIEMENTS

Le travail entrepris en coopération avec d'autres organismes représente une partie importante des activités de la Division des relevés hydrologiques du Canada. On a maintenu une étroite collaboration avec les organismes, publics ou privés, qui s'intéressent aux ressources en eau. On a échangé des données sur les sédiments, et l'assistance fournie par certains organismes a facilité les opérations d'échantillonnage des sédiments en suspension.

Dans les eaux adjacentes à la frontière internationale, les stations dépendent du Canada ou des États-Unis selon l'accord intervenu entre les deux pays, et les relevés sont faits et compilés de façon à satisfaire les deux pays. Ces stations sont nommées «Stations internationales de jaugeage» dans la présente publication.

La Division des relevés hydrologiques du Canada est redevable à plusieurs organismes fédéraux et provinciaux, dont les noms apparaissent dans le sommaire de l'année, de l'aide et de la collaboration qu'ils lui ont apportées pour l'obtention des données sur les sédiments. On trouvera également les noms des organismes qui ont fourni des données dans l'*Index de référence des données sur les sédiments*.

REVISIONS

A number of corrections or revisions have been made to previously published data. Many of these were required because of typographical or computational errors which were exposed when the data were stored on magnetic tape and monthly means were re-calculated by computer. Other errors were discovered or different interpretations of basic data were made during the systematic review of historical streamflow data.

Revisions to daily discharges or sediment data are not published at present. However, those stations where a systematic review has been conducted are identified in the Surface Water Data Reference Index publication. The Historical Streamflow Summary publications contain revisions to monthly and annual mean discharges, and annual extremes of discharge. Revisions, corrections or additions made to discharges and sediment after January 1, 1980, are indicated by an "R" symbol in the data summaries. Detailed information on revisions to historical data is available from the appropriate Regional Chief.

RÉVISIONS

On a corrigé ou révisé des données déjà publiées. Il a été nécessaire d'effectuer plusieurs corrections, car on a relevé des erreurs typographiques ou de calcul lorsqu'on a enregistré les données sur rubans magnétiques et qu'on a recalculé les moyennes mensuelles à l'aide d'un ordinateur. On a aussi relevé d'autres erreurs ou fait des interprétations différentes de certaines données de base au cours de la révision systématique des données historiques sur le débit.

Les corrections apportées aux débits journaliers ou aux données sur les sédiments ne sont pas publiées, du moins pour le moment. Cependant, les stations où on a effectué une révision systématique sont indiquées dans l'*Index de référence des données sur les eaux de surface*. Les publications intitulées *Sommaire chronologique de l'écoulement* contiennent des données révisées sur les débits mensuels et annuels moyens et les extrêmes annuels du débit. Les révisions, corrections ou ajouts apportés aux données sur les débits et sur les sédiments après le 1er janvier 1980 sont indiqués par la lettre R dans les résumés des données. On peut obtenir plus de détails sur les révisions en s'adressant au chef régional concerné.

ATHABASCA RIVER AT MCMURRAY - STATION NO. 07CC002

LOCATION: LAT 56 44 00 N LONG 111 22 30 W
DRAINAGE AREA: 100 000 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: MANUAL

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)		SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 25	21:00	14.0	340	B	MID	D48	47	178														
APR 26	21:00	12.0	380	B	MID	D48	82															
APR 27	21:30	11.0	380	B	MID	D48	80															
MAY 01	21:00	9.0	344		MID	D48	283	187	11	15	32	48	73	93	98	100				7	78	15
MAY 03	20:30	10.0	318		MID	D48	88															
MAY 05	20:45	10.0	270		MID	D48	86															
MAY 07	18:00	10.0	277		MID	D48	121	151														
MAY 19	17:30	8.0	448		MID	D48	98	185														
MAY 21	17:00	9.0	534		MID	D48	91															
MAY 22	17:45	9.0	481		MID	D48	83															
MAY 28	19:45	10.0	380		MID	D48	71	184														
MAY 29	20:00	12.0	382		MID	D48	88															
MAY 30	21:00	9.0	458		MID	D48	78															
JUN 02	21:00	9.0	533		MID	D48	78	180														
JUN 08	18:30	10.0	584		MID	D48	180	185														
JUN 09	18:00	10.0	588		MID	D48	88															
JUN 10	15:00	8.0	534		MID	D48	73	137														
JUN 12	15:50	8.0	898		MID	D48	87															
JUN 17	17:30	8.0	1350		MID	D48	82															
JUN 20	16:00	8.0	998		MID	D48	80	148														
AUG 10	17:00	15.0	540		MID	D48	17	158														
AUG 11	18:45	14.0	585		MID	D48	13															
AUG 14	18:30	14.0	708		MID	D48	17															
AUG 17	21:00	11.0	827		MID	D48	18	154														
AUG 18	20:00	12.0	880		MID	D48	13															
AUG 21	17:00	15.0	681		MID	D48	19															
AUG 24	17:30	14.0	883		MID	D48	14	155														
AUG 28	18:00	13.0	883		MID	D48	14															
AUG 28	09:30	13.0	802		MID	D48	15															

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

DISCHARGE SYMBOL(S): B - ICE CONDITIONS

ATHABASCA RIVER AT MCMURRAY - STATION NO. 07CC002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED MAXIMUM CONCENTRATION (mg/L)				SAMPLED MINIMUM CONCENTRATION (mg/L)				SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1973	PP-PCCCCCC--	MANUAL	4 040	JUN 17	*		14	FEB 28			---	---	---	---	---	---
1974	CCCCCCCCCC--	MANUAL	1 330	JUL 17			18	OCT 11			---	---	---	---	---	---
1975	P-PPCCCCCP--	MANUAL	1 800	JUL 02			7	MAR 18			---	---	---	---	---	---
1976	CCCCCCCCCC--	MANUAL	1 210	AUG 23			6	JAN 18			---	---	---	---	---	---
1977	---CCCCCC--	MANUAL	1 830	JUN 03			30	OCT 24			---	---	---	---	---	---
1978	CCCCCCCCCCCC	MANUAL	1 800	JUN 20			5	FEB 03	*		---	---	---	---	---	---
1979	--CCCCCCCP-	MANUAL	1 830	JUN 18			5	MAR 15			---	---	---	---	---	---
1980	----PCCCCC--	MANUAL	920	AUG 07			32	OCT 10			---	---	---	---	---	---
1981	----PCCCC---	MANUAL	888	JUN 07			15	SEP 16			---	---	---	---	---	---
1982	----PCCCC---	MANUAL	2 880	JUL 08			52	SEP 01			---	---	---	---	---	---
1983	----PCCCP---	MANUAL	45	JUN 7			5	SEP 5			---	---	---	---	---	---
1984	---PCCCC----	MANUAL	848	MAY 24			20	AUG 31			---	---	---	---	---	---
1985	----CCCCP---	MANUAL	827	JUL 6			45	JUN 15			---	---	---	---	---	---
1986	---PCCCCC--	MANUAL	3 880	JUL 22			17	OCT 6			---	---	---	---	---	---
1987	---CCCC-----	MANUAL	843	JUN 12			43	MAY 27			---	---	---	---	---	---
1988	---PCCCCC--	MANUAL	283	MAY 1			13	AUG 11			---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

ALBERTA

ATHABASCA RIVER NEAR WINDFALL - STATION NO. 07AE001

LOCATION: LAT 54 12 25 N LONG 116 03 45 W
DRAINAGE AREA: 18 800 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 18	15:25	6.0	293	144	DH59	56	186														
JUN 15	09:57	11.0	472	144	D49	83	133														
JUL 13	13:50	14.0	448	144	D49	83	132														
AUG 17	09:30	15.0	310	185 K	D49	50	135														
SEP 21	15:35	8.0	181	144	DH59	10	184														
NOV 02	13:50	1.0	100	132 K	DH59	4	218														

NOTE : SINGLE VERTICAL LOCATED AT 144 METRES FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK

ATHABASCA RIVER NEAR WINDFALL - STATION NO. 07AE001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	-------PP---	MANUAL	31	AUG 28	6	SEP 25	---	---	---	---	---	---
1975	----PP--P---	MANUAL	88	JUN 17	6	SEP 25	---	---	---	---	---	---
1976	---PPP-PP---	MANUAL	236	JUN 22	10	SEP 22	---	---	---	---	---	---
1977	----PP--P---	MANUAL	195	JUN 22	20	SEP 28	---	---	---	---	---	---
1978	---PPPPPPP--	MANUAL	513	JUN 06	8	OCT 31	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	632	MAY 29	7	OCT 30	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	1 510	JUN 08 *	11	OCT 15	---	---	---	---	---	---
1981	---PPPPPPP--	MANUAL	80	MAY 19	6	OCT 07	---	---	---	---	---	---
1982	-----PP-P---	MANUAL	894	JUL 07	36	SEP 28	---	---	---	---	---	---
1983	-----PPPP---	MANUAL	87	JUN 08	8	SEP 27	---	---	---	---	---	---
1984	----P-P-----	MANUAL	201	JUL 3	9	MAY 3	---	---	---	---	---	---
1985	----PPP-PP--	MANUAL	80	MAY 29	4	OCT 8 *	---	---	---	---	---	---
1986	----PPPP--P-	MANUAL	195	JUN 5	5	NOV 4	---	---	---	---	---	---
1987	---P-PPPPP--	MANUAL	231	JUN 16	8	APR 22	---	---	---	---	---	---
1988	----PPPPP-P-	MANUAL	63	JUN 15	4	NOV 2	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

BEAVER RIVER AT COLD LAKE RESERVE - STATION NO. 09AD005

LOCATION: LAT 54 21 15 N LONG 110 13 00 W
DRAINAGE AREA: 14 800 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 31	13:35	16.0	7.24	MID	DH48	8	223														
JUN 28	15:05	24.0	6.28	MID	DIP	28	222														
JUL 26	15:25	23.0	38.4	MID	DH48	43	138														
AUG 30	14:50	17.0	15.8	MID	DH48	7	183														
OCT 04	15:15	8.0	5.41	MID	DH48	4	226														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

ALBERTA

BEAVER RIVER AT COLD LAKE RESERVE - STATION NO. 05AD008

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	--------PP---	MANUAL	18	SEP 24		17	AUG 14		---	---	---	---	---	---
1975	---P--PPP---	MANUAL	388	APR 28	*	22	SEP 30		---	---	---	---	---	---
1976	---PPPPPP---	MANUAL	152	APR 13		10	MAY 19		---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	109	APR 18		11	SEP 08		---	---	---	---	---	---
1978	---P-PPPPPP-	MANUAL	285	JUN 03		5	AUG 21		---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	278	MAY 01		7	OCT 30		---	---	---	---	---	---
1980	---P-PPPP---	MANUAL	102	APR 22		11	JUL 18		---	---	---	---	---	---
1981	---PPPP-P---	MANUAL	43	APR 23		3	SEP 10	*	---	---	---	---	---	---
1982	----P--PP---	MANUAL	41	MAY 11		5	SEP 22		---	---	---	---	---	---
1983	---P---P-P--	MANUAL	42	APR 18		5	OCT 28		---	---	---	---	---	---
1984	---PP--P-P--	MANUAL	63	APR 7		5	OCT 3		---	---	---	---	---	---
1985	---P--P--P--	MANUAL	82	APR 24		4	JUL 30		---	---	---	---	---	---
1986	-----P------	MANUAL	43	JUN 3		43	JUN 3		---	---	---	---	---	---
1987	----PP-P----	MANUAL	38	MAY 4		5	AUG 17		---	---	---	---	---	---
1988	----PPPP-P--	MANUAL	43	JUL 28		4	OCT 4		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

BELLY RIVER NEAR GLENWOOD - STATION NO. 05AD041

LOCATION: LAT 49 21 08 N LONG 113 28 49 W
DRAINAGE AREA: 857 km²
TYPE OF FLOW: REGULATED SINCE 1935
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	PERCENT SILT CLAY
MAR 22	11:32	4.0	0.798	10RB	X	DIP	13	239												
MAY 03	14:51	11.0	1.18	7.0	X	DIP	18	187												
MAY 31	10:32	11.0	1.71	10.0	X	DH48	14	185												
JUN 20	15:00	24.0	1.51	10.0	X	DIP	15	138												
JUL 20	12:02	18.0	1.41	10.0	X	DH48	15	137												
AUG 23	09:30	13.0	1.58	10RB	X	DH48	10	148												
SEP 26	14:28	10.0	3.04	11.0	X	DH48	23	157												
NOV 03	15:00	5.0	1.78	8.5	X	DH48	4	148												

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

BELLY RIVER NEAR GLENWOOD - STATION NO. 05AD041

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1985	----PPPPPP--	MANUAL	85	OCT 29		3	SEP 24		---	---	---	---	---	---
1986	--PPPPPP--P-	MANUAL	414	MAY 27	*	4	AUG 28		---	---	---	---	---	---
1987	--PPPPPPP-P-	MANUAL	98	APR 8		2	NOV 3	*	---	---	---	---	---	---
1988	--P-PPPPP-P-	MANUAL	23	SEP 28		4	NOV 3		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

BIRCH RIVER BELOW ALICE CREEK - STATION NO. 07KE001

LOCATION: LAT 55 10 20 N LONG 113 04 05 W
DRAINAGE AREA: 9 880 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL (m)	SAMPLING	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 03	10:30	2.0	226	10LB	K	DH59	1030	140	24	30	47	58	77	87	94	99	100			13	67	20
JUN 28	10:35	15.0	57.0	MID	K	DH59	135	245														
JUL 19	11:00	16.0	282	MID	K	DH59	317	204	15	20	41	48	63	74	85	97	100			28	54	20
SEP 07	11:10	15.0	57.1	10LB	K	DH59	240	226	12	15	30	53	70	85	95	99	100			16	69	15

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK

BIRCH RIVER BELOW ALICE CREEK - STATION NO. 07KE001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1970	----PP------	MANUAL	138	MAY 14	26	JUN 22	---	---	---	---	---	---
1971	----P-PPP---	MANUAL	45	SEP 14	22	AUG 02	---	---	---	---	---	---
1972	----PPPP----	MANUAL	131	MAY 25	8	AUG 28	---	---	---	---	---	---
1973	----P-P--P--	MANUAL	1 430	JUL 12	37	OCT 18	---	---	---	---	---	---
1974	-----PPP-P--	MANUAL	244	AUG 20	48	OCT 04	---	---	---	---	---	---
1975	----PPPPP---	MANUAL	6 330	AUG 25 *	88	JUL 21	---	P--	---	---	---	---
1976	---PP-PPP-P-	MANUAL	657	APR 19	14	NOV 03	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	385	APR 17	14	SEP 20	---	---	---	---	---	---
1978	---PPPPPP---	MANUAL	1 300	APR 28	20	JUL 26	---	---	---	---	---	---
1979	-----PPPPPP--	MANUAL	835	MAY 19	20	JUL 27	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	255	APR 23	12	MAY 23	---	---	---	---	---	---
1981	----P-PP----	MANUAL	81	MAY 25	5	AUG 27 *	---	---	---	---	---	---
1982	----PP-PP---	MANUAL	423	MAY 24	18	JUN 24	---	---	---	---	---	---
1983	---P-P-PP---	MANUAL	498	APR 30	31	SEP 15	---	---	---	---	---	---
1984	----P----P--	MANUAL	180	MAY 25	57	OCT 3	---	---	---	---	---	---
1985	---P-P-P----	MANUAL	1 270	APR 28	8	AUG 21	---	---	---	---	---	---
1986	----PP-P----	MANUAL	1 820	MAY 8	78	AUG 23	---	---	---	---	---	---
1987	----PP-P--P-	MANUAL	755	MAY 1	57	NOV 4	---	---	---	---	---	---
1988	----PPP-P---	MANUAL	1 030	MAY 3	136	JUN 28	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

BOW RIVER AT CALGARY - STATION NO. 05BH004

LOCATION: LAT 51 03 00 N LONG 114 03 00 W
DRAINAGE AREA: 7 880 km²
TYPE OF FLOW: REGULATED SINCE 1913
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL (m)	SAMPLING	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 19	14:55		109	10LB	K	DH59	8	203														
JUN 14	08:47	11.0	183	10LB	K	DH59	25	143														

NOTE : SINGLE VERTICAL LOCATED AT 32 METRES FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK

BOW RIVER AT CALGARY - STATION NO. 05BH004

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : JAN-DEC MEAN LOAD (TONNES)	SUMMARY : JAN-DEC HISTORICAL MEAN LOAD (TONNES)	SUMMARY : JAN-DEC HISTORICAL STANDARD ERROR OF MEAN %
1972	---CCCCCCCCC	MANUAL	101	JUN 03	1	NOV 24	3 470	JUN 03	57 200	---	---	---
1973	CCCCCCCCCCCC	MANUAL	82	MAY 26	1	AUG 01	1 470	MAY 27	30 600	84.4	84.4	---
1974	CCCCCCCCCCCC	MANUAL	105	JUN 25 *	0	FEB 04 *	4 320	JUN 28 *	63 300 *	174	128	34.7
1975	CCCCCCCCCCCC	MANUAL	28	JUN 08	1	JAN 03	331	JUN 08	11 300	31.0	88.8	43.2
1976	CCCCCCCCCCCC	MANUAL	38	OCT 15	0	SEP 03	888	AUG 07	21 400	88.2	88.8	35.7
1977	CCCCCCCCCCCC	MANUAL	18	JUN 10	2	MAR 14	341	JUN 10	12 600	34.5	78.4	34.3
1978	CCCCCCCCCCCC	MANUAL	87	JUN 07	2	AUG 08	1 080	JUN 10	30 200	83.7	77 5	37.8
1979	P-PPP-------	MANUAL	20	APR 11	2	JAN 28	---	---	---	---	---	---
1981	----PP-P-P-P--	MANUAL	82	MAY 28	2	OCT 21	3 240	MAY 28	5 830	---	---	---
1982	---P-P-PP-P-	MANUAL	17	APR 28	1	SEP 02	---	---	---	---	---	---
1983	----PPPPP---	MANUAL	11	JUN 01	2	JUL 22	---	---	---	---	---	---
1984	----P-P-P---	MANUAL	11	JUL 3	3	MAY 1	---	---	---	---	---	---
1985	---PPPPPPP--	MANUAL	13	MAY 24	4	APR 12	---	---	---	---	---	---
1986	--PP-PP-PPP-	MANUAL	86	JUN 2	3	OCT 22	---	---	---	---	---	---
1987	---PPPPPPP--	MANUAL	7	APR 10	4	AUG 13	---	---	---	---	---	---
1988	----PP------	MANUAL	28	JUN 14	9	MAY 18	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

BOYER RIVER NEAR FORT VERMILION - STATION NO. 07JP002

LOCATION: LAT 58 28 42 N LONG 116 18 10 W
DRAINAGE AREA: 6 680 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)		SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 19	14:35	0.5	84.4	B	11.0	X	D48	184	384														
APR 28	10:30	3.0	60.6		11.0	X	D48	142	300														
MAY 06	09:10	4.0	44.1		11.0	X	D48	77	327														
JUN 03	12:45	15.0	21.0		17.0		DH59	58	463														
JUN 23	11:10	20.0	8.78		17.0		DH59	35	551														
JUL 28	11:00	20.0	10.8		17.0		DH59	28	559														
AUG 25	09:30	15.0	1.57		17.0		DH48	12	590														
SEP 29	09:00	5.0	0.031		17.0		DIP	7	633														
NOV 03	10:30	0.0	1.28		17.0		DH48	18	898														

NOTE : SINGLE VERTICAL LOCATED AT 17 METRES FOR 1988

DISCHARGE SYMBOL(S): B - ICE CONDITIONS
VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

BOYER RIVER NEAR PORT VERMILION - STATION NO. 07JF002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	SUMMARY : HISTORICAL MEAN LOAD (TONNES)	SUMMARY : HISTORICAL STANDARD ERROR OF MEAN
1974	·····PP··	MANUAL	10	OCT 31	9	SEP 17	---	---	---	---	---	---
1975	···PPP-PPP··	MANUAL	182	MAY 01	5	AUG 07	---	---	---	---	---	---
1976	···PPPPPP···	MANUAL	136	APR 21	9	JUN 23	---	---	---	---	---	---
1977	···P-PP-PP··	MANUAL	48	APR 26	4	SEP 08 *	---	---	---	---	---	---
1978	····PPP··P··	MANUAL	45	MAY 09	18	OCT 04	---	---	---	---	---	---
1979	·····PPP-P·	MANUAL	31	JUL 26	4	AUG 16	---	---	---	---	---	---
1980	·····P·····	MANUAL	15	JUN 05	15	JUN 05	---	---	---	---	---	---
1981	····PP·····	MANUAL	13	MAY 27	12	JUN 30	---	---	---	---	---	---
1982	····P·····	MANUAL	95	MAY 04	23	MAY 30	---	---	---	---	---	---
1983	····PP·····	MANUAL	38	MAY 05	11	JUN 02	---	---	---	---	---	---
1984	····PPPPPP··	MANUAL	73	MAY 2	5	AUG 29	---	---	---	---	---	---
1985	····PPPPPP··	MANUAL	20	OCT 30	5	JUL 23	---	---	---	---	---	---
1986	····PPPPPP··	MANUAL	48	MAY 12	5	AUG 26	---	---	---	---	---	---
1987	····PPPPPP··	MANUAL	89	OCT 28	11	JUN 24	---	---	---	---	---	---
1988	···PPPPPP·P·	MANUAL	184	APR 19 *	7	SEP 29	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

CLEARWATER RIVER AT DRAPER - STATION NO. 07CD001

LOCATION: LAT 56 41 07 N LONG 115 15 15 W
DRAINAGE AREA: 30 800 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLA
MAY 05	15:00	6.0	185	10RB	X	D48	71	125														
JUL 03	15:25	12.0	124	21.0	X	D48	114	150														
SEP 11	15:00	10.0	126	WERB	X	DIP	30															

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

CLEARWATER RIVER AT DRAPER - STATION NO. 07CD001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1967	----PP-PPP-P	MANUAL	330	MAY 12	6	DEC 13	---	---	---	---	---	---
1968	PPPPPPPPPP-P	MANUAL	388	JUL 04	3	MAR 21 *	---	---	---	---	---	---
1969	CCCCCCCCCCCC	MANUAL	2 030	APR 21	3	AUG 26	78 500	APR 21	810 000	2 470	2 470	---
1970	CCCCCCCCCCCC	MANUAL	2 380	JUL 02 *	5	JAN 28	137 000	JUL 02 *	1 630 000 *	6 550	4 530	45.4
1971	CCCCCCCCCCCC	MANUAL	1 550	APR 24	8	JAN 25	66 000	APR 24	867 000	2 720	3 540	33.5
1972	CCCCCCCCCCCC	MANUAL	841	MAY 04	5	AUG 21	47 200	MAY 04	485 000	1 980	3 480	30.7
1973	CCCCCCCCC---	MANUAL	1 710	AUG 07	5	FEB 26	80 400	AUG 07	980 000	---	---	---
1974	----CCCCCC--	MANUAL	768	MAY 11	80	SEP 11	78 500	MAY 01	1 240 000	---	---	---
1975	P-P-PCCCCC--	MANUAL	1 020	JUL 17	7	MAR 18	35 500	JUL 18	1 020 000	---	---	---
1976	PPCCCCCCCC--	MANUAL	1 280	AUG 28	10	MAR 03	35 200	AUG 28	717 000	2 920	3 340	34.7
1977	----CCCCCC--	MANUAL	852	MAY 20	15	OCT 28	17 600	MAY 31	485 000	---	---	---
1978	CCCCCCCCCCCC	MANUAL	884	APR 30	5	DEC 04	17 700	APR 30	527 000	2 120	3 140	32.4
1979	CCCCCCCCC--	MANUAL	1 000	MAY 17	7	JAN 08	46 800	MAY 17	873 000	3 880	3 300	18.7
1980	---CCCCCC--	MANUAL	1 060	AUG 05	11	JUL 28	25 300	AUG 18	653 000	---	---	---
1981	----PCCCC---	MANUAL	118	AUG 06	7	SEP 01	1 320	JUL 17	34 800	---	---	---
1982	-----CCCC---	MANUAL	47	AUG 15	5	JUL 20	711	JUN 01	30 800	---	---	---
1983	---PPCCCP---	MANUAL	123	APR 29	18	JUN 22	2 010	APR 29	82 800	---	---	---
1985	----CCCCC---	MANUAL	1 150	MAY 6	29	JUL 3	52 200	MAY 06	808 000	---	---	---
1986	----CCCCCC--	MANUAL	2 010	JUN 21	13	OCT 13	18 800	JUL 20	216 000	---	---	---
1987	----PCCCCC--	MANUAL	303	MAY 23	14	OCT 3	10 400	APR 24	167 000	---	---	---
1988	----P-P-P---	MANUAL	114	JUL 3	30	SEP 11	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

CROWSNEST RIVER AT FRANK - STATION NO. 05AA008

LOCATION: LAT 49 35 49 N LONG 114 24 33 W
DRAINAGE AREA: 404 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 23	12:53	5.0	0.853	10RB	X	DH48	3	320														
MAY 09	16:25	8.0	4.03	8.0	X	DH48	16	243														
JUN 02	14:16	10.0	8.08	10.0	X	DH48	13	210														
JUN 22	13:45	14.0	7.35	8.0	X	DH48	11	202														
JUL 18	09:37	11.0	2.99	5.0	X	DH48	5	221														
AUG 24	15:15	15.0	1.55	10LB	X	DH48	3	252														
SEP 26	17:00	10.0	1.57	7.0	X	DH48	8	248														
NOV 01	08:35	5.0	1.59	10.0	X	DH48	3	263														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

CROWSNEST RIVER AT FRANK - STATION NO. 05AA008

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN
1972	----PP------	MANUAL	802	MAY 31 *	42	JUN 09	---	---	---	---	---	---
1974	------P-PP--	MANUAL	5	JUL 23	2	OCT 02	---	---	---	---	---	---
1975	----PPPPPPP-	MANUAL	864	JUN 20	2	SEP 02	---	---	---	---	---	---
1976	---CCCCCCCP-	MANUAL	107	AUG 08	2	OCT 05	271	AUG 08	3 780	---	---	---
1977	--CCCCCCCCCC	MANUAL	26	JUN 05	4	APR 13	13.7	JUN 08	714	---	---	---
1978	CCCCCCCCCCCC	MANUAL	74	JUN 05	2	OCT 31	157	JUN 08	2 810	2.78	2.78	---
1979	CCCCCCCCCC--	MANUAL	183	MAY 25	0	FEB 12 *	525	MAY 27 *	3 620 *	10.4	8.88	88.1
1980	--CCCCCCCC--	MANUAL	86	APR 30	4	AUG 17				15.5	8.56	38.6
1981	----PP-PPP--	MANUAL	81	MAY 01	5	SEP 03	161	APR 30	2 080	6.50	8.29	28.3
1982	---PPPP-P---	MANUAL	28	APR 15	2	SEP 16	---	---	---	---	---	---
1983	--PPPPP-P-P-	MANUAL	88	MAR 30	3	SEP 01	---	---	---	---	---	---
1984	---PPPPPP---	MANUAL	35	APR 4	4	AUG 21	---	---	---	---	---	---
1985	---PPPPPPP--	MANUAL	24	APR 29	3	AUG 28	---	---	---	---	---	---
1986	--PPPP-PP-P-	MANUAL	255	MAY 28	3	MAR 26	---	---	---	---	---	---
1987	--PPPPPPP-P-	MANUAL	18	APR 7	2	AUG 27	---	---	---	---	---	---
1988	--P-PPPPP-P-	MANUAL	16	MAY 5	2	MAR 23	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

EAST PRAIRIE RIVER NEAR ENILDA - STATION NO. 07BF001

LOCATION: LAT 55 25 00 N LONG 116 20 20 W
DRAINAGE AREA: 1 480 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: MANUAL

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 14	10:00	7.0	5.88	MID	X	DIP	182															
APR 22	16:15	10.0	16.0	MID	X	DH59	1040	135														
MAY 19	14:35	14.0	14.2	26.0	X	DH59	455	144	24	28	47	55	65	74	80	98	100			26	46	28
JUN 10	18:30	13.0	149	24.0	X	DH59	10300	204	17	28	38	47	58	84	91	98	100			16	56	28
JUN 11	17:20	12.0	61.8	24.0	X	DH59	4330	181	18	20	31	39	56	74	89	98	100			26	54	20
JUN 20	10:30	17.0	14.4	26.0	X	DH59	399	158														
JUL 08	13:00	15.0	188	24.0	X	DH59	10100	212	15	18	29	39	53	82	84	98	100			18	64	18
JUL 08	17:10	16.0	72.7	24.0	X	DH59	4570	186	13	17	27	33	48	70	85	98	100			30	53	17
JUL 14	14:25	16.0	122	24.0	X	DH59	7580	188	12	16	26	32	50	73	90	98	100			27	57	16
JUL 20	10:20	20.0	19.4	24.0	X	DH59	516	183	12	15	26	34	47	60	80	97	100			40	45	15
AUG 24	08:50	15.0	5.89	20.0	K	DH48	344	213														
SEP 28	09:15	5.5	1.76	17.0	K	DH48	40	265														
OCT 31	09:35	1.0	1.44	14.0	K	DH48	75															

NOTE : SINGLE VERTICAL LOCATED AT 31 METRES FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

EAST PRAIRIE RIVER NEAR SMILDA - STATION NO. 07BF001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	---PP--PPP--	MANUAL	3 500	MAY 04	17	OCT 28	---	---	---	---	---	---
1975	---PPPPPPP--	MANUAL	5 730	JUL 18	32	SEP 28	---	---	---	---	---	---
1976	---PPPP-PP--	MANUAL	9 880	JUN 27	46	OCT 07	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	3 880	APR 13	37	AUG 26	---	---	---	---	---	---
1978	---------PP--	MANUAL	534	OCT 23	373	SEP 27	---	---	---	---	---	---
1979	---PPPPPP---	MANUAL	8 280	JUL 02	31	SEP 19	---	---	---	---	---	---
1980	----PPPPPP--	MANUAL	935	JUN 03	34	JUL 28	---	---	---	---	---	---
1981	----P-P-PP--	MANUAL	175	MAY 27	31	JUL 07	---	---	---	---	---	---
1982	---PPPP-PP--	MANUAL	10 100	MAY 04	38	OCT 04	---	---	---	---	---	---
1983	---PPPPP-P--	MANUAL	12 300	JUN 28 *	55	OCT 24	---	---	---	---	---	---
1984	---PPPPPP---	MANUAL	5 040	JUN 5	33	SEP 24	---	---	---	---	---	---
1985	---PPPPPP---	MANUAL	4 130	MAY 6	12	AUG 29 *	---	---	---	---	---	---
1986	---PPPPPPP--	MANUAL	6 620	JUL 16	34	SEP 23	---	---	---	---	---	---
1987	---PPP-PPP--	MANUAL	900	APR 22	13	OCT 26	---	---	---	---	---	---
1988	---PPPPPPP--	MANUAL	10 300	JUN 10	40	SEP 30	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ELBOW RIVER AT BRAGG CREEK - STATION NO. 05BJ004

LOCATION: LAT 50 58 53 N LONG 114 34 10 W
DRAINAGE AREA: 791 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 20	13:05	6.0	7.44	13.0 X	DH48	7	234														
JUN 30	13:00	12.5	11.0	12.0 X	DH48	2	189														
JUL 31	10:30	12.0	5.76	11.0 X	DIP	1	231														
SEP 06	13:05	12.0	6.35	5.0 X	DIP	1	226														
OCT 04	08:50	4.0	7.75	10.0 X	DIP	1	236														
NOV 03	15:00	3.0	5.36	13.0 X	DIP	2	227														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

ELBOW RIVER AT BRAGG CREEK - STATION NO. 05BJ004

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1988	-----C------	MANUAL	347	JUN 08	10	JUN 21	1 320	JUN 08	4 690	---	---	---
1989	----CCCCCC--	MANUAL	1 310	JUN 28 *	0	SEP 08 *	11 700	JUN 28 *	---	---	---	---
1970	---PPP------	MANUAL	1 300	JUN 15	2	APR 27	---	---	---	---	---	---
1971	--CCCCCCCCCC	MANUAL	858	JUN 08	0	MAR 02	5 360	JUN 06	---	73.6	72.6	---
1972	CCCCCCCCCC--	MANUAL	488	MAY 31	0	JAN 08	1 890	MAY 31	13 800	68.8	84.8	12.4
1973	--CCCCCCCP-	MANUAL	327	MAY 26	0	MAR 02	1 220	MAY 26	7 380	30.0	53.1	23.4
1974	--CCCCCCCP-	MANUAL	1 020	JUN 17	1	APR 05	5 820	JUN 17	34 300 *	140	74.8	31.3
1975	--CCCCCCCC--	MANUAL	371	JUN 20	0	MAY 13	1 580	JUN 20	8 050	34.7	84.8	33.0
1976	----PPPPP---	MANUAL	8	MAY 03	1	JUN 03	---	---	---	---	---	---
1977	---PP-PPP---	MANUAL	7	APR 05	1	MAY 04	---	---	---	---	---	---
1978	----PP-PP---	MANUAL	440	JUN 08	1	AUG 30	---	---	---	---	---	---
1979	---PP-PPP---	MANUAL	13	MAY 28	0	JUL 25	---	---	---	---	---	---
1980	---PP-PP-P--	MANUAL	30	MAY 30	3	JUL 30	---	---	---	---	---	---
1981	----PPPP----	MANUAL	840	MAY 26	2	AUG 26	---	---	---	---	---	---
1982	----PPPPP---	MANUAL	21	JUN 07	1	SEP 28	---	---	---	---	---	---
1983	---PPPPP----	MANUAL	84	JUN 24	3	AUG 17	---	---	---	---	---	---
1984	----PPPP----	MANUAL	59	JUN 11	0	MAY 3	---	---	---	---	---	---
1985	----PPPPPP--	MANUAL	346	SEP 13	2	OCT 30	---	---	---	---	---	---
1986	--PPPPPPP-P-	MANUAL	36	MAY 22	1	MAR 19	---	---	---	---	---	---
1987	-----PPPP-P-	MANUAL	82	JUL 22	1	JUN 4	---	---	---	---	---	---
1988	----PPP-PPP-	MANUAL	7	MAY 20	1	JUL 21	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

FIREBAG RIVER NEAR THE MOUTH - STATION NO. 07DC001

LOCATION: LAT 57 38 30 N LONG 111 10 30 W
DRAINAGE AREA: 5 990 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.063	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 03	17:40	1.0	95.0	10RB X	D49	67	116														
JUN 28	18:35	12.0	26.4	10RB X	DH49	7	161														
SEP 07	18:55	14.0	84.6	MID X	D49	37	167														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

FIREBAG RIVER NEAR THE MOUTH - STATION NO. 07DC001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	-----PP-P-P-	MANUAL	12	JUN 12	3	NOV 02	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	71	APR 27	4	SEP 22	---	---	---	---	---	---
1978	---P-PPP----	MANUAL	313	APR 29 *	7	JUL 05	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	116	MAY 22	5	AUG 23	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	48	APR 23	4	OCT 26	---	---	---	---	---	---
1981	----P-PP----	MANUAL	32	JUL 15	2	AUG 30 *	---	---	---	---	---	---
1982	----PP-PP---	MANUAL	45	MAY 18	5	JUN 23	---	---	---	---	---	---
1983	---P-P-PP---	MANUAL	84	APR 28	2	SEP 15	---	---	---	---	---	---
1984	----P--PPP--	MANUAL	35	AUG 11	4	OCT 3	---	---	---	---	---	---
1985	---P-P-P----	MANUAL	241	APR 29	2	AUG 21	---	---	---	---	---	---
1986	----P--P----	MANUAL	55	MAY 6	3	AUG 22	---	---	---	---	---	---
1987	----PP-P----	MANUAL	44	MAY 1	2	AUG 26	---	---	---	---	---	---
1988	----PP--P---	MANUAL	67	MAY 3	7	JUN 28	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

FREEMAN RIVER NEAR FORT ASSINIBOINE - STATION NO. 07AH001

LOCATION: LAT 54 21 52 N LONG 114 54 13 W
DRAINAGE AREA: 1 880 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 21	08:30	1.0	11.1	15.0	X	DIP	6	180														
MAY 19	13:05	8.0	13.0	MID	X	DH48	55	118														
JUN 15	14:00	13.0	28.5	30.0	K	DH59	172	108														
JUL 08	11:30	14.0	203	30.0	K	D49	958	178	13	18	87	87	78	88	93	98	100			15	85	19
JUL 09	13:40	12.0	141	30.0	K	D49	2480	144	13	18	38	33	48	88	88	88	100			34	80	18
JUL 10	11:00	15.0	105	30.0	K	D49	941	147	20	34	38	47	84	78	90	89	100			22	54	24
JUL 15	13:25	15.0	83.0	30.0	K	D49	648	124	7	9	18	23	40	57	78	87	100			43	48	9
AUG 18	12:25	18.0	8.77	26.0	K	DH48	32	188														
SEP 28	18:00	8.0	3.42	14.0	X	DH48	1	172														
NOV 03	08:45	1.0	2.18	7.0	X	DH48	3	177														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

FREEMAN RIVER NEAR FORT ASSINIBOINE - STATION NO. 07AH001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	------P--P--	MANUAL	1 200	JUL 15	6	OCT 28	---	---	---	---	---	---
1975	---PP-PPP---	MANUAL	781	APR 23	6	AUG 18	---	---	---	---	---	---
1976	---PPPPP---	MANUAL	287	APR 21	6	JUN 23	---	---	---	---	---	---
1977	---PPP-PP---	MANUAL	456	APR 18	6	AUG 23	---	---	---	---	---	---
1978	---PPPPPP-P-	MANUAL	853	JUN 15	10	AUG 30	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	2 890	JUN 15 *	7	SEP 20	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	1 110	APR 18	8	OCT 18	---	---	---	---	---	---
1981	---PPPPPPP--	MANUAL	388	APR 23	3	SEP 09	---	---	---	---	---	---
1982	------PP-P-P-	MANUAL	114	JUL 08	6	JUN 24	---	---	---	---	---	---
1983	-------PPP---	MANUAL	669	JUL 05	7	AUG 30	---	---	---	---	---	---
1984	----PPP-P----	MANUAL	2 340	JUN 8	7	SEP 5	---	---	---	---	---	---
1985	----PPPPPP--	MANUAL	127	MAY 29	6	JUN 19	---	---	---	---	---	---
1986	----PPPP--P-	MANUAL	841	MAY 7	2	AUG 26	---	---	---	---	---	---
1987	----PPPPPP--	MANUAL	88	AUG 13	7	SEP 9	---	---	---	---	---	---
1988	---PPPPPP-P-	MANUAL	2 480	JUL 8	1	SEP 28 *	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

HARTLEY CREEK NEAR FORT MACKAY - STATION NO. 07DA003

LOCATION: LAT 57 15 34 N LONG 111 27 53 W
DRAINAGE AREA: 388 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 08	08:20	5.0	5.81	10LB	K	DH48	38	138														
JUN 29	08:40	15.0	2.26	10LB	K	DH48	11	188														
SEP 16	12:05	9.0	3.11	10LB	K	DH48	11	198														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK

ALBERTA

HARTLEY CREEK NEAR FORT MACKAY - STATION NO. 07DA909

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PP-PPP-P-	MANUAL	88	APR 15	2	SEP 03	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	38	APR 21	2	SEP 22	---	---	---	---	---	---
1978	---PPPPPP---	MANUAL	106	AUG 31 *	3	JUN 28	---	---	---	---	---	---
1979	---PPPPPPP--	MANUAL	40	MAY 03	8	JUN 28	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	84	SEP 18	5	MAY 28	---	---	---	---	---	---
1981	----P-PP----	MANUAL	12	AUG 28	4	MAY 26	---	---	---	---	---	---
1982	----PP-P----	MANUAL	19	MAY 18	1	AUG 03 *	---	---	---	---	---	---
1983	---P-P-PP---	MANUAL	7	APR 27	2	AUG 08	---	---	---	---	---	---
1984	----P--PP---	MANUAL	8	SEP 21	4	AUG 11	---	---	---	---	---	---
1985	---P-P-P----	MANUAL	88	APR 30	8	JUN 18	---	---	---	---	---	---
1986	----PP-P----	MANUAL	13	MAY 13	2	AUG 28	---	---	---	---	---	---
1987	----PP-P----	MANUAL	38	MAY 2	9	JUN 19	---	---	---	---	---	---
1988	----PP--P---	MANUAL	38	MAY 8	11	JUN 29	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

HIGHWOOD RIVER NEAR THE MOUTH - STATION NO. 05BL024

LOCATION: LAT 50 47 00 N LONG 113 49 13 W
DRAINAGE AREA: 3 880 km²
TYPE OF FLOW: REGULATED SINCE 1910
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .003	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 02	08:30	7.0	7.88	WEBB X	DIP	6															
JUN 03	12:05	18.0	23.5	20.0 X	DH48	11	184														
JUN 30	08:00	14.0	13.1	18.0 X	DH48	9	192														
JUL 28	08:00	18.0	3.43	18.0 X	DH48	1	168														
SEP 01	08:45	11.0	8.04	20.0 X	DH48	8	228														
SEP 30	07:35	8.0	6.38	13.0 X	DH48	2	231														
NOV 01	13:00	1.0	8.73	18.0 X	DIP	1															

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): E - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

HIGHWOOD RIVER NEAR THE MOUTH - STATION NO. 05BL024

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1970	----CCCC----	MANUAL	6 870	JUN 14 *	0	AUG 28 *	254 000	JUN 14 *	380 000 *	---	---	---
1971	----------CCC	MANUAL	13	OCT 28	2	OCT 13	5.75	OCT 28	193	---	---	---
1972	CCCCCCCCCCCC	MANUAL	1 480	JUN 01	2	FEB 21	28 200	JUN 01	340 000	980	980	---
1973	CCCCCCCCCCCC	MANUAL	1 310	MAY 26	0	JAN 03	18 300	MAY 27	78 300	323	983	50.4
1974	CCCCCCCCCCCC	MANUAL	1 810	APR 30	0	SEP 04	25 800	JUN 17	321 000	1 310	871	33.3
1975	CCCCCCCCCCCC	MANUAL	3 010	JUN 20	0	SEP 29	75 900	JUN 20	317 000	887	875	23.4
1976	CCCCCCCCCCCC	MANUAL	327	MAY 11	0	DEC 14	7 810	AUG 08	30 400	1[illegible]	725	30.2
1977	CCCCCCCCCCCC	MANUAL	700	APR 05	1	JUN 29	1 810	APR 05	5 560	[illegible].3	808	38.1
1978	CCCCCCCCCCCC	MANUAL	1 020	JUN 05	2	SEP 24	13 400	JUN 08	102 000	418	880	31.5
1979	CCCCCCCCCCP-	MANUAL	838	MAY 24	0	JUL 13	7 880	MAY 27	49 100	300	833	31.0
1980	--CCCCCCCP-	MANUAL	1 380	JUN 03	4	NOV 05	15 300	JUN 03	103 000	421	830	28.1
1981	--PPPP-PPP--	MANUAL	1 340	MAY 21	3	SEP 28	---	---	---	---	---	---
1982	---PPPPPP---	MANUAL	170	JUN 16	3	JUL 28	---	---	---	---	---	---
1983	---PPPPP----	MANUAL	135	MAY 26	2	AUG 30	---	---	---	---	---	---
1984	----PP-PP---	MANUAL	37	MAY 30	3	MAY 2	---	---	---	---	---	---
1985	----PPPPPP--	MANUAL	83	MAY 24	3	OCT 28	---	---	---	---	---	---
1986	--P-PPPPP-P-	MANUAL	1 010	MAY 29	2	AUG 28	---	---	---	---	---	---
1987	----PPPPPP--	MANUAL	84	JUL 22	3	SEP 8	---	---	---	---	---	---
1988	----PPP-P-P-	MANUAL	11	JUN 3	1	JUL 28	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

JOSLYN CREEK NEAR FORT MACKAY - STATION NO. 07DA018

LOCATION: LAT 57 18 27 N LONG 111 44 30 W
DRAINAGE AREA: 267 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 05	11:55	2.0	4.38	10LB	K	DH48	1480	163	24	33	47	58	66	73	83	97	100			37	40	33
JUN 27	10:50	12.0	0.501	10RB	X	DH48	64	313														
SEP 14	09:00	9.0	0.192 V	MID		DIP	29															

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

DISCHARGE SYMBOL(S): V - DAILY MEAN; MANUAL GAUGE
VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

JOSLYN CREEK NEAR FORT MACKAY - STATION NO. 07DA018

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PP-PPP-P-	MANUAL	1 100	APR 15	37	NOV 04	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	142	MAY 04	11	SEP 18	---	---	---	---	---	---
1978	---PPPPPP---	MANUAL	2 380	MAY 01	13	AUG 22	---	---	---	---	---	---
1979	---PPPPPPP--	MANUAL	544	MAY 30	18	OCT 17	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	118	APR 24	6	JUN 24 *	---	---	---	---	---	---
1981	----P-PP----	MANUAL	264	MAY 28	8	AUG 28	---	---	---	---	---	---
1982	-----P-PP---	MANUAL	33	JUN 24	17	AUG 03	---	---	---	---	---	---
1983	---P-P-PP---	MANUAL	2 040	APR 26	17	SEP 14	---	---	---	---	---	---
1984	----P--PP---	MANUAL	154	MAY 22	48	SEP 22	---	---	---	---	---	---
1985	---P-P-P----	MANUAL	2 900	APR 29 *	33	AUG 20	---	---	---	---	---	---
1986	----PP-P----	MANUAL	2 510	MAY 7	39	AUG 23	---	---	---	---	---	---
1987	----PP------	MANUAL	596	MAY 2	111	JUN 17	---	---	---	---	---	---
1988	----PP--P---	MANUAL	1 490	MAY 5	29	SEP 14	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

KEG RIVER AT HIGHWAY NO. 35 - STATION NO. 07HF002

LOCATION: LAT 57 44 40 N LONG 117 37 20 W
DRAINAGE AREA: 887 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 02	12:00	1.0	5.85	20.0	X	DH48	595	217	30	51	78	90	95	97	98	100						
JUN 03	10:35	12.0	5.19	8.0	K	DH48	602	241	46	68	86	93	96	97	98	100				3	48	51
JUN 24	09:50	18.0	1.38	17.0		DH48	69	304												3	31	66
JUL 28	10:25	18.0	0.817	17.0		DH48	78	311														
AUG 25	13:20	18.0	0.748	17.0		DH48	48	314														
SEP 29	12:45	5.0	0.224	17.0		DH48	20	388														
NOV 04	10:00	0.0	0.421	MID	X	DH48	26	430														

NOTE : SINGLE VERTICAL LOCATED AT 17 METRES FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

KEG RIVER AT HIGHWAY NO. 35 - STATION NO. 07NF002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	---------PP--	MANUAL	24	SEP 19	17	OCT 31	---	---	---	---	---	---
1975	---PPPPPPP--	MANUAL	498	JUN 06	18	OCT 30	---	---	---	---	---	---
1976	---PPPPPPP--	MANUAL	1 040	JUN 28	21	SEP 30	---	---	---	---	---	---
1977	----PPP-PP--	MANUAL	809	JUN 13	33	OCT 26	---	---	---	---	---	---
1978	----PPPP-P--	MANUAL	2 050	MAY 23	34	OCT 27	---	---	---	---	---	---
1978	-----PPP--P-	MANUAL	3 850	JUN 28	18	NOV 02 *	---	---	---	---	---	---
1980	---PP-PP----	MANUAL	184	APR 28	37	JUL 03	---	---	---	---	---	---
1981	----PP-P----	MANUAL	738	MAY 04	37	JUN 28	---	---	---	---	---	---
1982	----P--P-P--	MANUAL	481	MAY 08	16	OCT 28	---	---	---	---	---	---
1983	----P-PPP---	MANUAL	111	MAY 08	40	AUG 11	---	---	---	---	---	---
1984	----PPPPPP--	MANUAL	1 270	MAY 22	48	AUG 27	---	---	---	---	---	---
1985	----PPPPP-P-	MANUAL	1 380	MAY 7	23	JUL 22	---	---	---	---	---	---
1986	----PPPPPP--	MANUAL	1 570	JUN 23	38	OCT 27	---	---	---	---	---	---
1987	----PPPPPP--	MANUAL	8 140	AUG 2 *	28	OCT 30	---	---	---	---	---	---
1988	----PPPPP-P-	MANUAL	602	JUN 3	30	SEP 28	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

LESSER SLAVE RIVER AT HIGHWAY NO. 2A - STATION NO. 07BK008

LOCATION: LAT 55 17 39 N LONG 114 35 26 W
DRAINAGE AREA: 14 400 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)		SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 16	14:10	3.0	14.7		26.0	DH59	8	151														
MAR 30	11:00	3.0	15.7		26.0	DH59	5	149														
APR 05	08:50	3.0	15.5		26.0	DH59	7	141														
APR 14	14:15	8.0	17.1		26.0	DH59	14	131														
APR 26	15:00	8.0	23.6	H	26.0	DH59	19	123														
JUN 01	10:45	12.0	37.2		26.0	DH59	40	126														
JUN 23	15:05	15.0	84.2		26.0	DH59	88	132														
JUL 07	17:10	12.0	82.7		26.0	DH59	1070	216	78	82	87	88	93	98	100					1	7	92
JUL 11	08:50	15.0	102		26.0	DH59	204	164														
JUL 20	15:40	15.0	81.5		26.0	DH59	329	136														
AUG 25	15:50	15.0	70.1		26.0	DH59	71	136														
SEP 27	15:30	8.0	47.2		26.0	DH59	44	140														
NOV 03	09:40	1.0	39.0		26.0	DH59	33	138														

NOTE : SINGLE VERTICAL LOCATED AT 26.0 METRES FOR 1988

DISCHARGE SYMBOL(S): H - DAILY MEAN

LESSER SLAVE RIVER AT HIGHWAY NO. 2A - STATION NO. 07BK008

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : APR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1977	---PPPPPPP--	MANUAL	186	APR 12	31	JUL 19	---	---	---	---	---	---
1978	-----PP-P---	MANUAL	70	JUL 05	39	SEP 05	---	---	---	---	---	---
1980	---PPP-PPP--	MANUAL	77	APR 15	18	OCT 28	---	---	---	---	---	---
1981	--PCCCCCCC--	MANUAL	111	JUL 05	15	SEP 30	629	JUL 05	34 300	180	180	---
1982	-----P-P----	MANUAL	38	AUG 05	23	AUG 31	---	---	---	---	---	---
1983	---PCCCCCC--	MANUAL	264	JUN 25	14	MAY 05	4 070	JUN 25	68 800	---	---	---
1984	--PCCCCCCP--	MANUAL	523	JUN 8	16	MAR 22	4 030	JUN 05	72 800	---	---	---
1985	--PCCCCCCC--	MANUAL	434	JUN 25	17	MAR 25	2 260	JUN 25	62 700	282	226	28.2
1986	--PCCCCCCC--	MANUAL	1 130	JUL 15 *	17	APR 8	5 130	JUL 15 *	89 700 *	416	265	35.6
1987	---PCCCCCC--	MANUAL	73	MAY 5	11	JUL 24	441	JUN 02	23 800	---	---	---
1988	--PP-PPPP-P-	MANUAL	1 070	JUL 7	5	MAR 30 *	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

LITTLE PADDLE RIVER NEAR MAYERTHORPE - STATION NO. 07BB005

LOCATION: LAT 53 57 51 N LONG 115 10 28 W
DRAINAGE AREA: 398 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 12	13:00	2.0	0.229	MID	DH48	15	239														
MAY 18	11:45	12.0	0.078	MID	DH48	6	184														
JUN 18	10:30	18.0	0.892	MID	DH48	37	283														
JUL 07	12:15	12.0	46.1	15.0 K	DH59	726	196	42	63	77	85	89	92	95	98	100			6	29	63
JUL 09	15:30	14.0	3.83	MID	DH48	222	230														
JUL 14	12:25	15.0	1.72	MID	DH48	48	242														
AUG 17	15:40	15.0	0.758	5.2 K	DH48	22	288														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK

LITTLE PADDLE RIVER NEAR MAYERTHORPE - STATION NO. 07BB005

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	------PPPP--	MANUAL	84 JUL 14		11 SEP 25		---	---	---	---	---	---
1975	---PPPPPP---	MANUAL	154 APR 30		11 JUN 17		---	---	---	---	---	---
1976	---PPPPP----	MANUAL	350 APR 13		8 AUG 10	*	---	---	---	---	---	---
1977	---PPP-PP---	MANUAL	434 MAY 30		14 JUN 22		---	---	---	---	---	---
1978	---PPPPPPP--	MANUAL	1 080 JUN 15	*	17 OCT 30		---	---	---	---	---	---
1979	---PPPPPPP--	MANUAL	595 APR 30		13 AUG 20		---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	705 APR 15		21 OCT 14		---	---	---	---	---	---
1981	-----PPPPP--	MANUAL	35 MAY 15		10 JUL 05		---	---	---	---	---	---
1982	------PPPP--	MANUAL	513 JUL 05		19 AUG 31		---	---	---	---	---	---
1983	------P------	MANUAL	185 JUN 25		185 JUN 25		---	---	---	---	---	---
1984	------P------	MANUAL	512 JUN 9		512 JUN 9		---	---	---	---	---	---
1985	----PPPPPP--	MANUAL	48 AUG 15		14 SEP 12		---	---	---	---	---	---
1986	---PPPPP--P-	MANUAL	384 JUL 15		6 AUG 26		---	---	---	---	---	---
1987	---PPPPPP---	MANUAL	103 MAY 22		8 JUL 13		---	---	---	---	---	---
1988	---PPPPP----	MANUAL	726 JUL 7		8 MAY 19		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

LOVETT RIVER NEAR THE MOUTH - STATION NO. 07BA003

LOCATION: LAT 52 59 50 N LONG 116 39 20 W
DRAINAGE AREA: 101 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 27	13:30	0.0	0.803	2.4 K	DH48	35	130														
MAY 31	15:45	10.0	0.304	7.5 X	DH48	5	188														
JUL 06	09:10	10.0	1.00	1.2 K	DH48	20	147														
JUL 26	14:45	18.0	0.515	8.5 X	DH48	9	276														
AUG 23	14:15	10.0	0.518	8.8 X	DH48	6	187														
SEP 20	15:05	8.0	0.535	8.4 K	DH48	11	233														
OCT 12	14:40	7.0	0.407	8.4 X	DH48	2	285														
NOV 01	12:50	2.0	0.253	8.0 X	DH48	1	172														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

LOVETT RIVER NEAR THE MOUTH - STATION NO. 07BA003

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PPPPPPP--	MANUAL	203 JUN 18		6 SEP 08		---	---	---	---	---	---
1977	---PPPPPP---	MANUAL	124 MAY 08		15 JUL 12		---	---	---	---	---	---
1978	----PPPPP-P-	MANUAL	18 JUN 21		4 SEP 27		---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	39 MAY 22		3 AUG 15		---	---	---	---	---	---
1980	---PPPPP-P--	MANUAL	326 JUN 24		6 OCT 28		---	---	---	---	---	---
1982	----PPPPPP--	MANUAL	880 JUL 08	*	8 SEP 21		---	---	---	---	---	---
1986	----PPPPP---	MANUAL	415 JUL 21		5 AUG 27		---	---	---	---	---	---
1987	---P-PP-PP--	MANUAL	24 OCT 7		6 SEP 2		---	---	---	---	---	---
1988	---PP-PPPPP-	MANUAL	35 APR 27		1 NOV 1	*	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

MACKAY RIVER NEAR FORT MACKAY - STATION NO. 07DB001

LOCATION: LAT 57 12 38 N LONG 111 41 38 W
DRAINAGE AREA: 6 570 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)		SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 05	15:55	2.0	59.6		MID	X	D49	204	134	12	20	35	45	59	71	89	99	100			29	51	20
JUN 29	09:05	14.0	47.7		10LB	K	DH48	86	178														
JUL 20	14:50	18.0	142		10LB	K	D49	316	178	8	12	30	43	54	80	94	99	100			20	68	12
SEP 14	10:30	12.0	7.85	M	---	X	DIP	86															

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

DISCHARGE SYMBOL(S): M - DAILY MEAN
VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

MACKAY RIVER NEAR FORT MACKAY - STATION NO. 07DB001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1975	-----PP--P--	MANUAL	353 JUL 20		37 OCT 08		---	---	---	---	---	---
1976	---PP-PPP-P-	MANUAL	886 APR 10		7 AUG 06		---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	157 APR 21		4 AUG 22		---	---	---	---	---	---
1978	----PPPPPP--	MANUAL	714 MAY 02	*	4 AUG 22		---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	38 SEP 15		5 MAY 22		---	---	---	---	---	---
1981	----P-PP----	MANUAL	13 MAY 25		1 AUG 26	*	---	---	---	---	---	---
1982	----PP-PP---	MANUAL	82 MAY 24		2 SEP 16		---	---	---	---	---	---
1983	----P-P-PP---	MANUAL	106 APR 26		3 SEP 17		---	---	---	---	---	---
1984	----P--PP---	MANUAL	67 MAY 24		5 SEP 22		---	---	---	---	---	---
1985	---P---P----	MANUAL	280 APR 28		7 AUG 20		---	---	---	---	---	---
1986	----PP-P----	MANUAL	313 MAY 7		8 AUG 23		---	---	---	---	---	---
1987	----PP-P----	MANUAL	74 MAY 2		11 AUG 27		---	---	---	---	---	---
1988	----PPP-P---	MANUAL	318 JUL 20		86 SEP 14		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

MCLEOD RIVER ABOVE EMBARRAS RIVER - STATION NO. 07AF002

LOCATION: LAT 53 28 12 N LONG 118 37 48 W
DRAINAGE AREA: 3 580 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 19	09:05	2.0	30.0	30.0 K	DH59	101	151														
MAY 18	10:40	11.0	18.7	22.0 K	DH48	11	177														
JUN 13	16:47	10.0	57.6	31.0 K	DH59	78	161														
JUL 11	17:05	15.0	14.1	MID	DH48	11	188														
AUG 16	15:50	15.0	11.9	25.0 K	DH48	4	213														
SEP 19	18:25	8.0	11.7	20.0 K	DH48	6	206														
OCT 31	15:40	1.0	7.13	12.0 K	DH48	3	228														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK

MCLEOD RIVER ABOVE EMBARRAS RIVER - STATION NO. 07AF002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PPPPPP---	MANUAL	19 AUG 25		3 SEP 23		---	---	---	---	---	---
1977	-----PPP-----	MANUAL	30 JUN 22		7 JUL 20		---	---	---	---	---	---
1978	-----PPPP----	MANUAL	108 JUN 05		3 AUG 23		---	---	---	---	---	---
1979	----PPPPP----	MANUAL	85 MAY 18		0 AUG 15	*	---	---	---	---	---	---
1980	---PPP-P-----	MANUAL	882 JUN 03		11 MAY 05		---	---	---	---	---	---
1981	----PPPP-----	MANUAL	113 MAY 11		3 JUL 08		---	---	---	---	---	---
1982	----PPPPPP--	MANUAL	200 MAY 04		6 OCT 27		---	---	---	---	---	---
1983	----PPPPPP--	MANUAL	28 MAY 10		1 SEP 20		---	---	---	---	---	---
1984	---PPPPPP---	MANUAL	38 SEP 24		5 AUG 31		---	---	---	---	---	---
1985	--------PPP--	MANUAL	5 AUG 12		3 SEP 9		---	---	---	---	---	---
1986	----P-P-PP---		1 040 JUL 18	*	3 SEP 9		---	---	---	---	---	---
1987	----PPPPPP---	MANUAL	77 AUG 11		1 OCT 27		---	---	---	---	---	---
1988	---PPPPPPP--	MANUAL	101 APR 19		3 OCT 31		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

MCLEOD RIVER NEAR WHITECOURT - STATION NO. 07AG004

LOCATION: LAT 54 00 46 N LONG 115 50 18 W
DRAINAGE AREA: 9 100 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 20	10:10	8.0	28.8	MID	DH48	12	309														
JUN 14	14:54	10.0	183	60.0 K	D48	131	148														
JUL 15	08:55	15.0	47.3	44.0 K	DH59	15	185														
AUG 16	17:25	14.0	22.1	30.0 K	DH48	4	188														
SEP 28	13:25	6.0	19.2	29.0 K	DH48	5	208														
NOV 01	13:15	1.0	13.7	38.0 K	DH48	4	245														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK

ALBERTA

MCLEOD RIVER NEAR WHITECOURT - STATION NO. 07AG004

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1975	---PPPPPP---	MANUAL	27	APR 21	3	SEP 22	150	APR 21 *	---	---	---	---
1977	---PPP-PP---	MANUAL	1 240	MAY 31	12	APR 30	---	---	---	---	---	---
1978	---PPPPPPP--	MANUAL	878	JUN 18	3	AUG 25	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	267	MAY 01	0	AUG 22 *	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	1 650	JUN 07 *	5	OCT 15	---	---	---	---	---	---
1981	---PPPPPPP--	MANUAL	33	MAY 19	3	SEP 08	---	---	---	---	---	---
1982	-----PP-P---	MANUAL	1 470	JUL 07	5	JUN 22	---	---	---	---	---	---
1983	-----PPPP---	MANUAL	115	JUL 05	2	AUG 31	---	---	---	---	---	---
1984	----P-P-----	MANUAL	300	MAY 2	84	JUL 24	---	---	---	---	---	---
1985	-----PPPPP--	MANUAL	18	AUG 13	4	JUL 15	---	---	---	---	---	---
1986	----PPPP--P-	MANUAL	167	MAY 7	2	AUG 26	---	---	---	---	---	---
1987	---PP-PP-P--	MANUAL	39	AUG 12	4	OCT 7	---	---	---	---	---	---
1988	----PPPPP-P-	MANUAL	131	JUN 14	4	AUG 18	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

MILK RIVER AT MILK RIVER - STATION NO. 11AA005

LOCATION: LAT 49 08 37 N LONG 112 04 44 W
DRAINAGE AREA: 2 720 km²
TYPE OF FLOW: REGULATED SINCE 1916
TYPE OF GAUGE: RECORDING

INTERNATIONAL GAUGING STATION

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (%)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	PERCENT SILT	PERCENT CLAY
MAR 08	10:05	3.0	2.62	13.5 X	DH48	37	254														
APR 13	08:15	8.0	23.1	13.0 X	DH48	486	118	6	17	28	37	56	78	93	98	100			25	58	17
APR 27	08:05	8.0	18.7	20.0 X	DH48	157	137														
MAY 18	13:30	11.0	21.4	26.0 K	DH48	270	128														
MAY 30	15:10	12.0	19.3	11.0 X	DH48	151	114														
JUN 14	07:15	14.0	18.2	11.0 X	DH48	93	106														
JUN 27	17:30	24.0	17.2	13.0 X	DH48	95	84														
AUG 01	18:20	19.0	13.3	20.0 X	DH48	62	87														
AUG 30	11:00	15.0	0.383	WERB X	DIP	3															
SEP 28	08:15	7.0	0.241	WERB X	DIP	6															
NOV 01	15:00	7.0	0.394	WERB X	DIP	1	367														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

MILK RIVER AT MILK RIVER - STATION NO. 11AA005

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1974	----PPPPPP--	MANUAL	582	MAY 06	3	OCT 17	---	---	---	---	---	---
1975	-PPPPPPPPP--	MANUAL	5 130	JUN 21 *	6	APR 15	---	---	---	---	---	---
1976	--PPPPPPPP--	MANUAL	758	MAY 11	14	OCT 13	---	---	---	---	---	---
1981	--CCCCCCCCP-	MANUAL	831	MAR 11	7	NOV 02	3 880	MAY 17	80 500	388	388	---
1982	--CCCCCCCCP-	MANUAL	4 070	APR 14	2	SEP 08	38 400	APR 14 *	138 000 *	536	446	17.5
1983	--PPPPPPPP--	MANUAL	3 300	JUN 15	3	SEP 13	---	---	---	---	---	---
1984	--PPPP-P-P--	MANUAL	434	MAY 30	5	OCT 31	---	---	---	---	---	---
1985	--PPPPPP-PP-	MANUAL	1 480	APR 3	5	NOV 5	---	---	---	---	---	---
1986	--PPPPPPPP--	MANUAL	286	JUN 24	4	SEP 28	---	---	---	---	---	---
1987	--PPPPP-PP--	MANUAL	759	APR 7	6	SEP 29	---	---	---	---	---	---
1988	--PPPP-PP-P-	MANUAL	498	APR 13	1	NOV 1 *	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

MUSKEG RIVER NEAR FORT MACKAY - STATION NO. 07DA008

LOCATION: LAT 57 11 30 N LONG 111 34 05 W
DRAINAGE AREA: 1 480 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 06	11:30	5.0	14.8	10LB	K	DH48	13	148														
JUN 29	12:10	18.0	7.36	3.0	K	DH48	7	218														
SEP 10	14:45	10.0	15.8	10LB	K	DH48	7	218														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK

MUSKEG RIVER NEAR FORT MACKAY - STATION NO. 07DA008

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENCED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PP-PPP-P-	MANUAL	41	APR 11	3	AUG 03 *	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	28	APR 20	3	AUG 28	---	---	---	---	---	---
1978	---PPPPPP---	MANUAL	15	APR 24	3	JUN 26	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	13	MAY 02	5	MAY 30	---	---	---	---	---	---
									---	---	---	---
1980	---PPPPPPP--	MANUAL	18	APR 24	5	OCT 25	---	---	---	---	---	---
1981	----P-PP----	MANUAL	6	JUL 15	3	MAY 27	---	---	---	---	---	---
1982	----PP-PP---	MANUAL	8	MAY 19	4	JUN 25	---	---	---	---	---	---
1983	---P-P-PP---	MANUAL	11	APR 27	3	AUG 07	---	---	---	---	---	---
1984	----P--PP---	MANUAL	59	SEP 21 *	5	AUG 11	---	---	---	---	---	---
									---	---	---	---
1985	---P-P-P----	MANUAL	20	APR 30	6	AUG 21	---	---	---	---	---	---
1986	----PP-P----	MANUAL	10	MAY 9	3	AUG 23	---	---	---	---	---	---
1987	----PP-P----	MANUAL	7	MAY 3	4	JUN 19	---	---	---	---	---	---
1988	----PP--P---	MANUAL	13	MAY 6	7	JUN 29	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

NORTH SASKATCHEWAN RIVER AT EDMONTON - STATION NO. 05DF001

LOCATION: LAT 53 32 15 N LONG 113 28 04 W
DRAINAGE AREA: 28 000 km²
TYPE OF FLOW: REGULATED SINCE 1950
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 07	09:30	0.0	155	118	DH59	93	183														
MAY 05	09:30	10.0	118	118	DH59	9	214														
MAY 30	13:40	15.0	168	118	DH59	21	207														
JUN 27	13:40	21.0	168	118	DH59	9	228														
JUL 25	16:00	24.0	117	118	DH59	10	187														
AUG 22	14:30	18.0	234	118	DH59	66	168														
SEP 18	11:00	18.0	220	118	DH59	13	188														
NOV 07	14:00	4.0	124	118	DH59	13	177														

NOTE : SINGLE VERTICAL LOCATED AT 118 METRES FOR 1988

ALBERTA

NORTH SASKATCHEWAN RIVER AT EDMONTON - STATION NO. 05DF001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1974	------P-----	MANUAL	1 580	JUL 13	220	JUL 16	---	---	---	---	---	---
1975	----P-PPP---	MANUAL	87	MAY 16	3	SEP 23 *	---	---	---	---	---	---
1976	---P-PP-----	MANUAL	143	APR 09	34	JUL 22	---	---	---	---	---	---
1977	----PPP-P---	MANUAL	2 460	MAY 30 *	25	SEP 28	---	---	---	---	---	---
1978	---PPPPPP-P-	MANUAL	777	JUN 08	7	AUG 31	---	---	---	---	---	---
1979	---PPPPPP-P-	MANUAL	400	APR 27	7	AUG 23	---	---	---	---	---	---
1980	------PPPP---	MANUAL	142	JUN 02	28	SEP 28	---	---	---	---	---	---
1981	-----PP------	MANUAL	267	MAY 26	64	MAY 07	---	---	---	---	---	---
1982	----PPPPPP--	MANUAL	1 980	JUL 07	11	AUG 10	---	---	---	---	---	---
1983	---P-PPPP-P-	MANUAL	358	APR 26	8	AUG 31	---	---	---	---	---	---
1984	---PPPPP-P--	MANUAL	251	JUN 13	6	OCT 3	---	---	---	---	---	---
1985	---PP--PP---	MANUAL	214	APR 7	11	AUG 8	---	---	---	---	---	---
1986	---PPPPPPPP-	MANUAL	284	APR 16	6	SEP 16	---	---	---	---	---	---
1987	---PPPPPP-P-	MANUAL	238	APR 13	8	NOV 4	---	---	---	---	---	---
1988	---PPPPPP-P-	MANUAL	88	AUG 22	9	MAY 5	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

NORTH SASKATCHEWAN RIVER AT WHIRLPOOL POINT - STATION NO. 08DA009

LOCATION: LAT 52 00 08 N LONG 116 28 10 W
DRAINAGE AREA: 1 920 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 16	12:10	3.0	61.9	9.0	D49	42	141														
JUN 23	10:10	11.5	210	9.0	D49	256	92														
JUL 27	10:10	10.0	203	9.0	D49	274	97	15	20	51	69	81	87	94	99	100			13	67	20
AUG 30	10:55	11.0	147	9.0	D49	75	85														
SEP 27	13:50	7.0	27.5	9.0	D49	7	139														
NOV 02	11:35	3.0	24.3	9.0	D49	9	149														

NOTE : SINGLE VERTICAL LOCATED AT 9.0 METRES FOR 1988

NORTH SASKATCHEWAN RIVER AT WHIRLPOOL POINT - STATION NO. 08DA009

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : APR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1972	----CCCCCCCC	DUAL	374	JUN 12	9	NOV 27	30 300	JUN 11 *	257 000	---	---	---
1973	CCCCCCCCCCCC	DUAL	829	MAY 15 *	0	NOV 20 *	20 200	JUN 24	278 000 *	1 300	1 300	---
1974	CCCCCCCCCCCC	DUAL	580	JUL 16	1	NOV 27	13 400	JUN 17	358 000	1 210	1 280	3.6
1975	CCCCCCCCCCCC	DUAL	570	JUL 13	0	JAN 15	14 100	JUL 13	260 000	1 170	1 230	3.1
1976	CCCCPCCCCCCC	DUAL	271	AUG 25	2	FEB 24	5 640	AUG 04	168 000	---	---	---
1977	CCCCCCCCCCCC	MANUAL	606	JUN 06	1	NOV 15	10 000	JUN 08	137 000	637	1 080	13.8
1978	CCCCCCCCCCCC	MANUAL	458	SEP 04	1	JAN 09	8 080	JUL 27	280 000	1 220	1 110	10.8
1979	P--CCCCCCCP-	MANUAL	503	JUN 01	2	JAN 15	10 300	MAY 27	228 000	1 070	1 100	8.8
1980	---CCCCCC---	MANUAL	784	JUL 23	5	SEP 27	15 100	JUL 23	309 000	---	---	---
1981	----CCCCCC--	MANUAL	437	JUL 28	5	MAY 05	10 800	JUL 29	257 000	---	---	---
1982	------PPPPP--	MANUAL	138	JUL 27	7	OCT 19	---	---	---	---	---	---
1983	---PPPPPPP--	MANUAL	241	MAY 31	2	OCT 18	---	---	---	---	---	---
1984	---PPPPPP---	MANUAL	238	JUL 31	0	APR 30	---	---	---	---	---	---
1985	----PP-PP---	MANUAL	184	AUG 1	13	SEP 28	---	---	---	---	---	---
1986	-----PPP----	MANUAL	280	JUN 18	37	JUL 31	---	---	---	---	---	---
1987	----PPPPP---	MANUAL	172	JUL 30	32	AUG 27	---	---	---	---	---	---
1988	----PPPPP-P-	MANUAL	274	JUL 27	7	SEP 27	---	---	---	---	---	---

DUAL - MANUAL AND AUTOMATIC SAMPLING MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

NOTIKEWIN RIVER AT MANNING - STATION NO. 07HC001

LOCATION: LAT 56 55 10 N LONG 117 37 05 W
DRAINAGE AREA: 4 880 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1986

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
JUN 22	10:35	15.0	15.3	30.0	DH59	28	178														
JUL 27	14:15		21.3	30.0	DH59	82	197														
AUG 24	14:20		16.8	30.0	DH59	58	181														
SEP 28	10:55	8.0	3.13	30.0	DIP	7	237														

NOTE : SINGLE VERTICAL LOCATED AT 30 METRES FOR 1986

NOTIKEWIN RIVER AT MANNING - STATION NO. 07HC001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	·····P-P-	MANUAL	61 SEP 18		8 NOV 01		---	---	---	---	---	---
1975	···PPPPPPP--	MANUAL	611 APR 30		4 AUG 11		---	---	---	---	---	---
1976	···PPPPP-P--	MANUAL	2 520 JUN 25		13 OCT 01		---	---	---	---	---	---
1977	···P-PP-PP--	MANUAL	291 APR 18		13 JUL 24		---	---	---	---	---	---
1978	····P-PP-P--	MANUAL	3 400 MAY 25		6 AUG 31		---	---	---	---	---	---
1979	·····PPPPPP--	MANUAL	2 060 MAY 11		9 OCT 30		---	---	---	---	---	---
1980	···P--PPP---	MANUAL	183 SEP 25		16 SEP 02		---	---	---	---	---	---
1981	····PPPPPP--	MANUAL	84 MAY 25		8 OCT 28		---	---	---	---	---	---
1982	····PPPP----	MANUAL	1 850 MAY 03		3 JUL 23	*	---	---	---	---	---	---
1983	····PP-PP---	MANUAL	3 850 JUN 21	*	7 SEP 01		---	---	---	---	---	---
1984	···PPP-P----	MANUAL	983 MAY 28		8 AUG 2		---	---	---	---	---	---
1985	····PPPP-P--	MANUAL	630 MAY 8		3 AUG 27		---	---	---	---	---	---
1986	···PPPPPP---	MANUAL	2 910 MAY 6		3 SEP 24		---	---	---	---	---	---
1987	···PPPPP-P--	MANUAL	3 940 AUG 4		5 OCT 28		---	---	---	---	---	---
1988	·····PPPP---	MANUAL	56 AUG 24		7 SEP 28		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

OLDMAN RIVER NEAR BROCKET - STATION NO. 05AA024

SUSPENDED SEDIMENT FOR 1966

LOCATION: LAT 49 33 27 N LONG 113 48 30 W
DRAINAGE AREA: 4 400 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

TOTAL SUSPENDED SEDIMENT LOAD 26 600 TONNES FOR THE PERIOD MAR 21 TO NOV 03

REMARKS:

MAR

DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)
1	5.80 B		
2	5.75 B		
3	6.21 B		
4	6.20 B		
5	6.14		
6	5.78		
7	5.61		
8	6.71		
9	6.86		
10	7.13		
11	6.55		
12	6.16		
13	6.37		
14	6.58		
15	5.70		
16	5.46		
17	5.22		
18	5.70		
19	6.62		
20	7.03		
21	8.03	8 S	6.65
22	8.02	11	7.62
23	7.28	12	7.55
24	8.70	12	8.95
25	6.07	10	5.24
26	6.31	10	6.37
27	7.40	17	10.8
28	7.87	15	10.2
29	8.85	11	8.61
30	6.22	9	4.84
31	6.24	9	4.85
TOTAL	200.04		75.08

APR

DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)
1	8.81	9	5.16
2	8.07	12	8.37
3	11.2	23	25.2
4	12.7	25	27.4
5	10.5	10	9.18
6	10.1	12	10.5
7	17.0	50	73.4
8	19.1	44	72.6
9	16.3	25	67.3
10	14.0	30	36.3
11	14.0	26 S	31.4
12	16.8	30	43.8
13	19.7	34 S	57.8
14	21.5	38 S	70.6
15	26.7	59 S	131
16	34.8	92	275
17	42.8	116	430
18	47.8	133 S	548
19	50.5	103	450
20	49.6	68 S	294
21	45.4	45	177
22	41.1	20 S	71.0
23	36.6	14	44.3
24	35.9	12	37.3
25	34.1	12 S	35.4
26	30.6	12 S	30.9
27	28.5	11 S	27.1
28	26.7	10 S	24.6
29	31.7	14	38.3
30	38.3	21	69.5
31			
TOTAL	787.88		2 205.57

MAY

DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)
1	27.6	16	45.7
2	24.7	10 S	26.6
3	31.7	11	30.1
4	31.5	12 S	32.7
5	35.3	18	54.7
6	41.0	25 S	92.1
7	46.1	50	199
8	47.7	77	317
9	54.4	127	587
10	66.7	203 S	1 170
11	88.0	388 S	2 930
12	102	375 S	3 300
13	122	172	1 810
14	115	61 S	606
15	86.4	51 S	425
16	85.5	41 S	303
17	80.6	39	286
18	69.4	38 S	234
19	75.1	25 S	159
20	70.0	23	139
21	65.4	19	107
22	66.3	20	115
23	78.2	28	191
24	80.5	41 S	317
25	84.5	27 S	197
26	76.8	20	133
27	77.1	18 S	120
28	76.0	18 S	118
29	81.0	22	154
30	83.0	20 S	143
31	81.3	22	174
TOTAL	2 226.3		16 548.3

JUN

DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)
1	88.2	26	184
2	78.8	22 S	152
3	88.8	21 S	166
4	89.1	23	187
5	78.7	29	232
6	83.3	38 S	269
7	92.4	70 S	559
8	128	234 S	3 810
9	120	195 S	2 020
10	103	83	552
11	94.5	46	367
12	85.4	35	258
13	76.1	23 S	155
14	70.8	17	104
15	66.8	16 S	90.7
16	62.7	18	96.7
17	62.4	17 S	91.7
18	61.7	16	80.0
19	59.1	13	66.4
20	55.0	13 S	61.8
21	51.1	15 S	66.2
22	48.3	18	75.1
23	45.5	21 S	82.6
24	42.2	17 S	63.5
25	40.8	13 S	45.8
26	36.0	11	35.1
27	36.0	10 S	31.1
28	35.1	10 S	30.3
29	35.1	14	42.7
30	32.4	12 S	33.6
31			
TOTAL	2 002.8		9 826.1

JUL

DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)
1	29.3	10	26.3
2	27.1	10	23.4
3	26.0	10	22.5
4	25.5	10 S	22.0
5	26.2	12 S	27.2
6	27.6	15	36.0
7	25.5	8 S	17.6
8	22.9	6 S	11.8
9	21.2	8	14.7
10	20.7	26	46.5
11	19.8	44 S	75.7
12	19.9	40	68.4
13	16.8	38	55.2
14	17.8	28	44.8
15	17.1	24	35.5
16	16.7	18 S	26.0
17	16.3	13	18.3
18	15.8	7 S	9.56
19	15.6	14	18.9
20	14.8	32	40.4
21	13.8	30 S	35.8
22	12.8	19	21.3
23	12.6	11	12.0
24	12.5	7 S	7.56
25	12.1	6	6.27
26	11.8	5	5.01
27	11.3	5 S	4.88
28	11.1	5	4.80
29	10.8	5	4.71
30	10.6	4	3.66
31	10.3	4	3.56
TOTAL	553.7		752.81

AUG

DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)
1	11.2	8	8.61
2	14.1	18 S	22.3
3	15.5	8	11.8
4	14.9	5 S	6.28
5	13.1	5	5.66
6	12.3	4	4.25
7	12.2	3 S	3.16
8	12.7	3	3.29
9	12.0	3	3.11
10	11.1	3	2.88
11	10.8	3 S	2.80
12	10.7	3	2.77
13	10.6	3	2.75
14	10.1	3	2.62
15	9.91	3 S	2.57
16	10.6	4	3.66
17	9.88	3	2.56
18	10.0	3	2.59
19	9.45	3	2.45
20	9.43	4	3.26
21	9.85	4	3.40
22	9.62	4 S	3.32
23	8.84	5	3.67
24	8.55	5 S	3.69
25	8.39	5	3.66
26	9.08	7	5.49
27	10.2	10	8.80
28	9.40	6	4.87
29	8.68	3	2.24
30	7.91	3 S	2.06
31	7.48	3	1.94
TOTAL	331.45		139.82

B - ICE CONDITIONS S - SAMPLE(S) COLLECTED THIS DAY

OLDMAN RIVER NEAR BROOKS - STATION NO. 05AA024

SUSPENDED SEDIMENT FOR 1986

DAY	SEP DAILY DISCHARGE (m^3/s)	SEP MEAN CONCENTRATION (mg/L)	SEP DAILY LOAD (t)	OCT DAILY DISCHARGE (m^3/s)	OCT MEAN CONCENTRATION (mg/L)	OCT DAILY LOAD (t)	NOV DAILY DISCHARGE (m^3/s)	NOV MEAN CONCENTRATION (mg/L)	NOV DAILY LOAD (t)	DAY
1	7.44	3	1.93	11.3	3	2.80	8.08	4	3.13	1
2	7.32	3	1.90	11.3	3	2.83	8.19	3	2.38	2
3	7.19	3	1.86	11.3	3	2.80	10.0	4 E	3.46	3
4	7.01	3	1.82	11.3	3 E	2.80	10.1			4
5	7.11	3	1.84	10.7	3	2.77	8.85			5
6	7.00	3	1.81	10.6	4	3.73	8.59			6
7	6.65	3	1.67	10.0	5	4.32	13.3			7
8	6.35	3	1.65	8.70	8	6.03	13.0 E			8
9	6.53	3	1.69	8.66	8	6.01	11.1 E			9
10	6.61	3	1.68	9.41	7	5.89	10.8 E			10
11	7.31	4	2.83	9.02	7	5.46	11.3 E			11
12	7.62	4	2.89	8.86	7	5.43	11.4 E			12
13	7.61	3 E	1.83	8.88	7	5.26	10.6 E			13
14	6.78	3	1.76	8.16	8	4.23	10.7 E			14
15	6.36	3	1.66	8.38	8	4.33	8.61 E			15
16	6.15	3	1.60	8.83	8 E	5.81	8.78 E			16
17	8.00	4	2.38	11.3	7	6.83	8.96 E			17
18	7.87	4	4.08	13.2	8	8.27	8.45 E			18
19	7.66	3	1.98	11.1	8	4.80	9.14 E			19
20	7.99	3 E	2.08	10.4	6	3.89	8.72 E			20
21	7.66	3	1.98	10.1	3	2.82	8.21 E			21
22	7.33	3	1.87	10.1	3	2.82	10.9 E			22
23	6.84	3	1.80	9.82	3	2.87	10.8 E			23
24	7.82	3	1.99	9.87	3	2.81	8.84 E			24
25	8.02	4	3.13	9.39	3	2.43	8.19 E			25
26	10.3	5 E	4.45	8.41	4	3.25	8.82 E			26
27	12.8	6 E	6.71	10.2	4	3.88	3.11 E			27
28	11.1	3	2.88	8.91	4	3.11	4.87 E			28
29	10.8	3	2.80	7.28	3	1.80	8.01 E			29
30	10.7	3	2.77	6.63	5	3.73	10.2 E			30
31				8.87	6	4.13				31
TOTAL	234.07		72.69	305.83		118.83	280.00		8.87	TOTAL

ALBERTA

OLDMAN RIVER NEAR BROCKET - STATION NO. 05AA024

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 21	14:30	5.0	8.15	10LB	X	DIP	8	220														
APR 11	17:00	10.0	14.4	48.0		D49	25	197														
APR 13	18:00	10.0	20.3	48.0		D49	33															
APR 14	11:00	7.0	21.8	48.0		D49	36															
APR 15	18:00	13.0	27.4	48.0		D49	70															
APR 18	17:00	10.0	48.0	48.0		D49	139	188														
APR 20	11:00	8.0	50.8	48.0		D49	71															
APR 22	11:30	8.0	41.7	48.0		D49	20															
APR 25	12:15	4.0	34.1	48.0		D49	11															
APR 26	12:30	7.0	30.0	48.0		D49	14															
APR 27	15:30	11.0	28.5	48.0		D49	10	178														
APR 28	17:30	12.0	28.6	48.0		D49	11															
MAY 02	17:25	5.0	34.5	10LB	X	DIP	8	178														
MAY 02	17:30	10.0	34.0	48.0		D49	12															
MAY 04	11:30	9.0	32.0	48.0		D49	9															
MAY 08	12:30	7.0	41.2	48.0		D49	22	183														
MAY 10	11:00	12.0	86.8	48.0		D49	193															
MAY 11	11:30	11.0	89.8	48.0		D49	402															
MAY 12	11:30	10.0	106	48.0		D49	361	128														
MAY 14	18:30	10.0	113	48.0		D49	80															
MAY 15	16:00		84.0	48.0		D49	52															
MAY 15	13:25	9.0	87.2	48.0		D49	38	130														
MAY 16	21:30	13.0	82.2	48.0		D49	38															
MAY 18	21:40	12.0	84.9	48.0		D49	23															
MAY 19	10:00	9.0	78.0	48.0		D49	26															
MAY 24	13:30	10.0	82.9	48.0		D49	48	136														
MAY 25	17:30	13.0	82.2	48.0		D49	23															
MAY 27	18:30	13.0	78.7	48.0		D49	18															
MAY 28	18:30	15.0	76.1	48.0		D49	16															
MAY 30	14:12	9.0	81.9	48.0		D49	17	134														
MAY 30	16:15	9.0	81.2	48.0		D49	23															
JUN 02	21:30	12.0	73.1	48.0		D49	20															
JUN 03	11:30	11.0	66.5	48.0		D49	33	144														
JUN 06	11:30	13.0	62.8	48.0		D49	33															
JUN 07	12:30	13.0	63.8	48.0		D49	57															
JUN 08	13:15	10.0	138	48.0		D49	405	138	10	12	23	40	61	73	88	97	100			27	61	12
JUN 09	21:30	13.0	111	48.0		D49	91	137														
JUN 13	18:30	13.0	78.8	48.0		D49	22															
JUN 15	18:00	18.0	66.2	48.0		D49	17															
JUN 17	17:30	18.0	63.4	48.0		D49	18	184														
JUN 20	17:00	19.0	54.8	48.0		D49	13															
JUN 21	17:30	20.0	50.8	48.0		D49	15															
JUN 23	10:23	18.0	45.8	48.0		D49	21	181														
JUN 24	17:30	19.0	43.0	48.0		D49	16															
JUN 25	11:30	19.0	40.3	48.0		D49	13															
JUN 27	11:30	19.0	36.9	48.0		D49	69															
JUN 28	18:30	17.0	38.6	48.0		D49	72															
JUN 30	16:30	15.0	31.8	48.0		D49	11	174														
JUL 04	17:30	17.0	28.4	48.0		D49	10															
JUL 05	12:30	15.0	25.8	48.0		D49	11															
JUL 07	17:30	18.0	24.9	48.0		D49	7	177														
JUL 08	17:30	20.0	23.4	48.0		D49	8															
JUL 11	19:30	18.0	20.1	48.0		D49	44															
JUL 16	17:00	18.0	15.7	48.0		D49	17	178														
JUL 18	16:30	18.0	15.8	48.0		D49	8															
JUL 21	10:05	18.0	14.1	30.0	X	DH48	33	182														
JUL 21	16:30	22.0	13.8	48.0		D49	36															
JUL 24	16:30	22.0	12.8	48.0		D49	8															
JUL 27	10:30	18.0	11.5	48.0		D49	5	190														
AUG 02	13:00	14.0	17.7	48.0		D49	20															
AUG 04	18:30	14.0	14.0	48.0		D49	5	185														
AUG 07	17:30	15.0	12.4	48.0		D49	3															
AUG 11	19:30	18.0	10.8	48.0		D49	37	186														
AUG 15	15:30	19.0	9.98	48.0		D49	3															
AUG 22	19:30	18.0	9.30	48.0		D49	4	196														
AUG 24	08:00	18.0	8.44	12.0	X	DH48	6															
AUG 24	19:30	20.0	8.50	48.0		D49	4															
AUG 30	18:30	19.0	7.88	48.0		D49	3	201														
SEP 13	11:00	15.0	8.93	48.0		D49	3	203														
SEP 20	17:00	10.0	7.92	48.0		D49	3	210														
SEP 26	17:45	10.0	11.5	48.0		D49	7															
SEP 27	15:04	12.0	12.2	30.0	X	DH48	7	202														
OCT 04	11:30	10.0	11.2	48.0		D49	3	194														
OCT 12	18:30	10.0	8.97	48.0		D49	7	195														
OCT 18	18:00	8.0	8.04	48.0		D49	5	200														
NOV 03	10:04	5.0	10.2	28.0	X	DH48	4	200														

NOTE : SINGLE VERTICAL LOCATED AT 48 METRES FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

OLDMAN RIVER NEAR BROCKET - STATION NO. 05AA024

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1965	----CCCCCCCC	MANUAL	330	JUN 05	1	OCT 10	7 180	JUN 05	81 950	---	---	---
1967	CCCCCCCCCCCC	MANUAL	2 800	MAY 31	2	JAN 11	137 000	MAY 31	903 000	3 880	3 880	---
1968	CCCCCCCCCCCC	MANUAL	948	MAY 23	1	JAN 08	24 400	MAY 23	77 700	311	2 000	64.2
1969	CCCCCCCCCCCC	MANUAL	1 630	JUN 26	0	SEP 15 *	73 600	JUN 26	246 000	1 010	1 670	61.5
1970	CCCCCCCCCCCC	MANUAL	872	JUN 16	0	OCT 22	26 500	JUN 16	127 000	517	1 380	56.6
1971	CCCCCCCCCCCC	MANUAL	940	MAY 06	1	SEP 21	12 700	MAY 26	131 000	530	1 210	51.8
1972	CCCCCCCCCCCC	MANUAL	1 720	MAY 31	0	OCT 27	94 500	JUN 01	583 000	2 780	1 470	38.2
1973	CCCCCCCCCCCC	MANUAL	831	MAY 15	0	OCT 31	8 930	MAY 18	42 800	172	1 380	40.4
1974	CCCCCCCCCCCC	MANUAL	987	MAY 04	2	SEP 25	23 800	JUN 17	277 000	1 130	1 370	36.6
1975	CCCCCCCCCCCC	MANUAL	5 580	JUN 20 *	0	FEB 23	588 000	JUN 20 *	1 110 000 *	4 500	1 830	32.9
1976	CCCCCCCCCCCC	MANUAL	2 130	AUG 08	1	SEP 28	49 500	AUG 08	177 000	718	1 840	31.7
1977	CCCCCCCCCCCC	MANUAL	108	APR 07	3	JAN 06	283	APR 09	8 890	27.1	1 400	33.0
1978	CCCCCCCCCCCC	MANUAL	1 220	MAY 15	2	FEB 14	20 000	MAY 15	222 000	805	1 380	31.2
1979	CCCCCCCCCC--	MANUAL	367	MAY 26	1	SEP 01	6 810	MAY 27	86 100	354	1 280	31.1
1980	--CCCCCCCP-	MANUAL	644	MAY 27	4	NOV 03	13 000	MAY 27	79 100	323	1 210	31.0
1981	--CCCCCCCC--	MANUAL	1 700	MAY 22	4	OCT 27	70 100	MAY 22	405 000	1 650	1 240	28.2
1982	---CCCCCC---	MANUAL	483	MAY 26	4	AUG 30	7 240	MAY 26	55 600	---	---	---
1983	--CCCCCCCC--	MANUAL	241	MAY 27	3	SEP 30	3 980	MAY 26	34 200	140	1 170	28.6
1984	--PCCCCCCC--	MANUAL	148	MAY 17	1	AUG 28	1 320	MAY 16	15 700	---	---	---
1985	---CCCCCCC--	MANUAL	285	SEP 13	3	JUL 30	2 230	SEP 13	29 800	---	---	---
1986	--CCCCCCCP-	MANUAL	1 140	MAY 28	3	SEP 18	27 600	MAY 28	196 000	801	1 150	27.4
1987	--PCCCCCCP-	MANUAL	482	APR 29	1	SEP 30	8 300	APR 30	60 600	---	---	---
1988	--PCCCCCCP-	MANUAL	405	JUN 6	3	AUG 7	3 810	JUN 06	28 800	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

ALBERTA

OLDMAN RIVER NEAR LETHBRIDGE - STATION NO. 05AD007

SUSPENDED SEDIMENT FOR 1988

LOCATION: LAT 49 42 30 N LONG 112 52 30 W
DRAINAGE AREA: 17 000 km²
TYPE OF FLOW: REGULATED SINCE 1910
TYPE OF GAUGE: RECORDING

TOTAL SUSPENDED SEDIMENT LOAD 24 800 TONNES FOR THE PERIOD MAR 19 TO NOV 02

REMARKS:

	MAR			APR			MAY			
DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAY
1	19.3 B			12.9	12 S	13.4	8.17	19 S	10.1	1
2	20.5 B			12.1	8 S	8.38	8.46	24 S	19.8	2
3	17.7 B			11.6	17 S	17.0	8.58	29 S	21.5	3
4	16.0 B			12.2	11 S	11.6	7.89	20 S	13.7	4
5	15.7 B			14.2	11 S	13.8	6.80	25 S	14.7	5
6	16.4 B			16.3	8 S	11.3	7.34	30 S	19.0	6
7	16.3 B			16.0	15 S	20.7	9.39	27 S	21.7	7
8	17.2 B			13.9	19 S	22.6	12.4	21 S	22.5	8
9	17.8			20.7	13 S	23.2	17.4	15 S	22.6	9
10	14.9			21.5	10 S	18.6	19.3	15 S	25.0	10
11	15.5			18.9	15	24.5	24.5	15 S	31.8	11
12	12.4			17.9	16 S	24.7	46.6	45 S	207	12
13	14.2			17.7	11 S	16.6	73.5	179 S	1 140	13
14	14.0			20.1	14 S	24.3	99.0	401 S	3 290	14
15	14.1			22.1	19 S	36.3	90.3	277 S	2 190	15
16	13.8			22.0	14 S	26.9	73.2	121 S	765	16
17	12.1			21.6	10 S	18.8	59.0	72 S	367	17
18	13.0			26.9	18 S	40.3	58.8	48 S	244	18
19	11.8	15 S	16.4	30.9	19 S	50.7	60.3	41 S	214	19
20	12.9	18 S	21.2	30.0	19 S	49.2	49.3	33 S	141	20
21	13.4	21 S	24.3	28.3	16 S	39.1	40.4	21 S	73.3	21
22	13.6	12 S	14.1	25.4	13 S	28.0	34.3	20 S	59.1	22
23	14.3	13 S	16.1	22.2	12 S	23.0	33.6	20 S	58.4	23
24	14.3	12 S	14.8	15.8	13 S	17.7	43.4	24 S	90.0	24
25	13.8	11 S	12.8	11.8	12 S	12.0	59.7	49 S	253	25
26	13.4	12 S	13.9	9.25	11 S	8.79	56.8	47 S	229	26
27	14.7	77 S	97.8	9.15	11 S	8.71	46.6	22 S	89.0	27
28	12.0	36 S	37.3	11.9	9 S	9.25	44.1	18 S	69.8	28
29	14.1	12 S	14.6	9.89	18 S	15.5	45.4	21 S	82.4	29
30	14.1	10 S	12.2	8.01	18 S	12.1	47.6	20 S	82.3	30
31	13.5	8 S	9.33				65.3	32 S	183	31
TOTAL	463.4		308.93	533.81		554.91	1 248.14		9 909.4	TOTAL

	JUN			JUL			AUG			
DAY	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAILY DISCHARGE (m³/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAY
1	83.7	26 S	196	9.89	26 S	22.4	8.73	19	13.8	1
2	82.8	41 S	229	8.27	19 S	13.6	10.9	21	19.8	2
3	68.0	26 S	135	6.88	15 S	9.02	11.1	18	17.3	3
4	50.2	24 S	104	6.52	14 S	8.89	11.4	16	15.8	4
5	46.0	24 S	95.5	6.98	16 S	9.09	9.80	12	10.2	5
6	52.8	28 S	119	7.56	43 S	29.2	8.86	10	7.39	6
7	60.0	34 S	176	7.12	42 S	25.8	7.72	10	6.67	7
8	72.0	71 S	442	6.90	34 S	20.3	7.20 A	10	6.21	8
9	109	284 S	2 800	6.32	21 S	11.6	7.11 E	10	6.14	9
10	109	241 S	2 270	6.80	16 S	9.89	6.88 E	10 S	5.94	10
11	93.0	120 S	964	6.38	16 S	8.37	6.86 A	11	6.36	11
12	82.8	71 S	508	5.88 A	22 S	11.2	6.48	11 S	6.16	12
13	74.8	49 S	317	5.64	21	10.2	6.51	11	6.19	13
14	66.4	35 S	201	5.10	20	8.81	6.17	10 S	5.33	14
15	58.8	26 S	132	4.90	18 S	7.62	5.67	10	4.81	15
16	51.8	18 S	80.2	4.64	18	6.89	6.33	11	6.02	16
17	45.8	13 S	51.4	4.99	15 S	6.47	5.98	10 S	5.16	17
18	41.8	12 S	43.1	4.82	16	6.66	5.70	10	4.93	18
19	37.4	10 S	32.3	4.86	18 S	8.30	5.58	10	4.81	19
20	33.6	9 S	26.3	4.80	18	6.77	6.22	11	5.91	20
21	27.1	9 S	21.1	5.34	16 S	7.28	7.74	15 S	10.0	21
22	20.0	11 S	19.0	5.05	16	6.96	7.83	11	7.44	22
23	12.8	7 S	7.80	5.18	17 S	7.61	7.92	11	7.53	23
24	8.85	8 S	6.89	5.17	14	6.25	6.88	10	5.95	24
25	6.14	10 S	5.30	5.17	12 S	5.38	6.07	10 S	5.24	25
26	5.38	7 S	3.24	5.44	11	5.17	5.82	10	5.03	26
27	4.44	8 S	3.07	5.60	11 S	5.32	6.02	10	5.20	27
28	6.14	13 S	6.90	5.33	11	5.06	5.97	11	5.67	28
29	8.99	32 S	24.9	5.22	12 S	5.41	5.48	13	6.17	29
30	10.4	33 S	29.7	5.24	11 S	4.98	5.25	13 S	5.90	30
31				4.80	11	4.56	4.82	11 S	4.58	31
TOTAL	1 377.23		8 850.70	180.20		299.83	320.85		233.85	TOTAL

A - MANUAL GAUGE B - ICE CONDITIONS E - ESTIMATED S - SAMPLE(S) COLLECTED THIS DAY

SUSPENDED SEDIMENT FOR 1988

DAY	SEP			OCT			NOV			DAY
	DAILY DISCHARGE (m^3/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAILY DISCHARGE (m^3/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	DAILY DISCHARGE (m^3/s)	MEAN CONCENTRATION (mg/L)	DAILY LOAD (t)	
1	4.82	11	4.38	8.13	28	19.3	28.4	24	58.8	1
2	4.72	11 S	4.48	14.4	38	46.8	20.3	21 S	36.8	2
3	4.78	11	4.55	17.0	44	64.6	17.3			3
4	4.78	11	4.55	17.7	60 S	91.8	16.6			4
5	4.72	11	4.49	16.2	82 S	72.8	16.1			5
6	4.88	11 S	4.32	13.4	33 S	38.2	15.8			6
7	4.40	11	4.18	11.1	21 S	20.1	15.3			7
8	4.63	11	4.40	10.5	20 S	18.1	14.6 S			8
9	4.81	11	4.57	10.4	14 S	12.6	14.0 S			9
10	5.17	13 S	5.93	10.2	12	10.6	13.0 S			10
11	7.20	15	9.95	9.73	13 S	10.1	14.2 S			11
12	7.88	15	10.5	9.84	12	9.39	15.6 S			12
13	8.13	15 S	10.5	10.7	15 S	13.9	15.5 S			13
14	7.88	15	9.82	10.8	19	17.8	14.0 S			14
15	7.07	14	8.38	10.9	18	17.0	13.1 S			15
16	6.82	13	8.05	11.4	15	14.8	13.1 S			16
17	6.68	13	8.01	11.6	12 S	12.2	12.6 S			17
18	6.45	12 S	8.69	11.8	11	11.3	13.5 S			18
19	7.57	11	7.18	13.1	11	12.5	12.0 S			19
20	7.88	10	8.84	18.0	14	31.6	10.2 S			20
21	7.30	8	5.05	22.3	18 S	36.6	12.1 S			21
22	8.88	8 S	6.62	27.8	42	138	12.1 S			22
23	8.22	8	4.30	40.8	89	314	12.8 S			23
24	8.85	8	6.82	40.4	102	356	12.4 S			24
25	8.88	11	8.88	40.4	123 S	429	10.2 S			25
26	8.59	11 S	8.31	40.2	163 S	531	5.38 S			26
27	8.43	11	8.18	40.7	180	583	5.35 S			27
28	4.88	11	4.61	38.0 S	143	482	4.84 S			28
29	4.86	11 S	4.43	34.0 S	109	320	9.13 S			29
30	4.67	13 S	5.47	33.0 S	62 S	177	7.77 S			30
31				32.2	34	84.6				31
TOTAL	177.15		178.80	868.00		3 874.89	398.47		95.7	TOTAL

ALBERTA

OLDMAN RIVER NEAR LETHBRIDGE - STATION NO. 05AD007

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 18	10:00	10.0	12.8	126	K	DH59	18	286														
MAR 20	11:30	10.0	12.8	126	K	DH59	17															
MAR 21	14:50	10.0	13.5	126	K	DH59	31															
MAR 22	09:25	5.0	13.5	126	K	DH59	11															
MAR 23	08:10	4.0	14.1	48.0	X	DIP	10															
MAR 23	08:10	4.0	14.2	126	K	DH59	14															
MAR 24	09:30	5.0	14.6	126	K	DH59	12															
MAR 25	10:15	5.0	13.6	126	K	DH59	10															
MAR 26	09:00	5.0	13.3	126	K	DH59	12															
MAR 27	10:10	2.0	14.5	126	K	DH59	168	341														
MAR 28	14:55	5.0	10.5	126	K	DH59	35	288														
MAR 28	09:50	2.0	13.8	126	K	DH59	12															
MAR 28	14:30	4.0	14.0	48.0	X	DH48	12															
MAR 30	09:15	4.0	14.1	126	K	DH59	11															
MAR 31	09:15	5.0	13.7	126	K	DH59	7	314														
APR 01	09:25	5.0	13.3	126	K	DH59	14															
APR 02	09:30	7.0	12.1	126	K	DH59	8															
APR 03	10:05	4.0	11.9	126	K	DH59	22															
APR 04	14:55	10.0	12.4	126	K	DH59	10															
APR 05	09:15	5.0	13.9	126	K	DH59	12															
APR 06	09:10	12.0	16.5	126	K	DH59	6															
APR 07	09:05	7.0	16.3	126	K	DH59	16	280														
APR 08	14:10	8.0	13.0	126	K	DH59	18															
APR 09	09:15	8.0	20.5	126	K	DH59	13															
APR 10	10:35	8.0	21.5	126	K	DH59	10															
APR 12	09:00	10.0	18.0	126	K	DH59	17															
APR 13	09:35	10.0	17.6	126	K	DH59	10															
APR 14	08:35	10.0	30.3	126	K	DH59	13	272														
APR 15	15:05	15.0	32.5	126	K	DH59	20															
APR 16	09:50	13.0	34.0	126	K	DH59	15															
APR 17	09:25	8.0	30.6	126	K	DH59	9															
APR 18	14:05	15.0	30.5	126	K	DH59	19															
APR 19	09:05	10.0	31.2	126	K	DH59	18	226														
APR 20	09:05	10.0	30.5	126	K	DH59	19															
APR 21	09:10	10.0	26.5	126	K	DH59	18															
APR 22	14:55	13.0	25.0	126	K	DH59	14															
APR 23	09:35	10.0	23.1	126	K	DH59	11															
APR 24	09:35	9.0	18.1	126	K	DH59	13															
APR 25	14:40	8.0	11.2	126	K	DH59	12															
APR 26	09:30	7.0	8.17	126	K	DH59	12	266														
APR 27	09:05	9.0	8.76	126	K	DH59	9															
APR 27	15:00	13.0	9.42	14.0	X	DH48	13															
APR 28	09:20	13.0	12.8	126	K	DH59	8															
APR 28	14:15	12.0	10.3	126	K	DH59	23															
APR 30	09:30	11.0	8.38	126	K	DH59	18															
MAY 01	10:00	10.0	8.80	126	K	DH59	18															
MAY 02	10:00	3.0	8.83	126	K	DH59	16															
MAY 03	09:00	10.0	8.66	126	K	DH59	27	271														
MAY 04	08:50	11.0	8.02	126	K	DH59	15															
MAY 05	09:00	11.0	8.81	126	K	DH59	62															
MAY 06	14:30	15.0	7.40	126	K	DH59	30															
MAY 07	09:40	11.0	8.73	126	K	DH59	27															
MAY 08	09:50	12.0	11.4	126	K	DH59	21															
MAY 09	09:50	14.0	17.7	126	K	DH59	14															
MAY 10	09:15	15.0	19.5	126	K	DH59	15	277														
MAY 11	08:00	16.0	22.7	126	K	DH59	15															
MAY 12	08:50	16.0	42.0	126	K	DH59	35															
MAY 13	08:25	17.0	71.5	126	K	DH59	148															
MAY 14	08:30	12.0	100	126	K	DH59	408	152	15	20	41	60	82	93	99	100				7	73	20
MAY 15	08:00	12.0	84.1	126	K	DH59	314	135	12	22	38	55	76	89	95	100				11	67	22
MAY 16	08:15	14.0	76.8	126	K	DH59	123															
MAY 17	08:25	15.0	69.3	126	K	DH59	76	198														
MAY 18	08:20	11.0	66.6	126	K	DH59	47															
MAY 18	08:00	11.0	62.0	126	K	DH59	41															
MAY 20	08:15	13.0	50.1	126	K	DH59	38															
MAY 21	09:40	15.0	41.3	126	K	DH59	20															
MAY 22	09:30	16.0	34.4	126	K	DH59	20															
MAY 23	09:30	16.0	30.8	126	K	DH59	19															
MAY 24	09:00	11.0	38.1	126	K	DH59	21															
MAY 25	08:25	15.0	88.1	126	K	DH59	44	186														
MAY 26	08:25	10.0	80.4	100		DH59	53															
MAY 27	09:05	12.0	48.8	100		DH59	33															
MAY 28	08:20	16.0	43.3	100		DH59	17															
MAY 29	08:20	16.0	48.2	100		DH59	21															
MAY 30	08:20	13.0	43.3	100		DH59	17	180														
MAY 31	09:15	13.0	55.0	100		DH59	32															
JUN 01	09:00	12.0	61.1	100		DH59	32															
JUN 02	09:05	12.0	65.4	100		DH59	41															
JUN 02	14:05	12.0	63.8	100		DH59	43	185														
JUN 03	09:00	15.0	55.4	100		DH59	27															
JUN 04	09:40	15.0	48.8	100		DH59	23															
JUN 05	09:05	15.0	45.5	100		DH59	23															
JUN 06	08:30	15.0	50.2	100		DH59	22															
JUN 07	09:55	15.0	58.8	100		DH59	33															
JUN 08	08:30	15.0	66.0	100		DH59	45															
JUN 09	13:45	15.0	116	100		DH59	201															
JUN 10	09:05	15.0	113	100		DH59	277	144	15	28	54	65	83	93	98	100				6	69	25
JUN 11	08:25	14.0	94.9	100		DH59	132															
JUN 12	08:40	14.0	83.7	100		DH59	76															
JUN 13	09:05	11.0	75.9	100		DH59	61															
JUN 14	08:00	13.0	67.1	100		DH59	38															
JUN 15	09:30	13.0	56.9	100		DH59	27															
JUN 16	09:05	20.0	52.5	100		DH59	18															
JUN 17	08:50	21.0	48.4	100		DH59	14															
JUN 18	07:55	20.0	43.1	100		DH59	13	155														
JUN 19	07:45	18.0	38.0	100		DH59	10															
JUN 20	17:25	22.0	33.1	100		DH59	8															
JUN 21	08:00	21.0	28.4	100		DH59	8															
JUN 22	08:30	22.0	20.8	100		DH59	12															
JUN 23	08:00	23.0	13.3	100		DH59	7															
JUN 24	08:55	20.0	9.55	100		DH59	9															
JUN 25	17:45	23.0	9.48	100		DH59	9	162														

NOTE : SINGLE VERTICAL LOCATED AT 100 METRES FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

CONTINUED

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1984

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002 .004 .008 .016 .031 .062 .125 .250 .500 1.00 2.00	PERCENT SAND	SILT	CLAY
JUN 26	10:15	23.0	5.88	100	DH59	8					
JUN 27	08:40	23.0	4.22	100	DH59	6					
JUN 28	15:00	25.0	4.57	100	DH59	6					
JUN 29	08:50	20.0	8.94	100	DH59	13					
JUN 30	07:35	15.0	10.7	100	DH59	30					
JUN 30	19:25	20.0	10.5	100	DH59	36					
JUL 01	10:30	13.0	10.1	100	DH59	29					
JUL 02	09:05	18.0	8.48	100	DH59	27	237				
JUL 03	08:20	19.0	7.18	100	DH59	20					
JUL 04	07:45	20.0	5.80	100	DH59	15					
JUL 05	07:50	20.0	5.80	100	DH59	14					
JUL 06	07:50	15.0	7.82	100	DH59	14					
JUL 07	08:10	15.0	7.08	100	DH59	33					
JUL 07	17:35	18.0	7.18	100	DH59	43					
JUL 08	07:55	15.0	7.08	100	DH59	37					
JUL 09	09:15	20.0	6.28	100	DH59	42	214				
JUL 10	08:00	21.0	5.84	100	DH59	21					
JUL 11	08:05	22.0	4.51	100	DH59	19					
JUL 12	08:00	18.0	5.88	100	DH59	18					
JUL 16	08:50	12.0	5.03	100	DH59	22					
JUL 17	15:45	20.0	5.33	100	DH59	19	218				
JUL 19	07:30	16.0	4.84	100	DH59	15					
JUL 21	07:35	21.0	5.41	100	DH59	16					
JUL 23	08:00	19.0	5.16	100	DH59	16	197				
JUL 26	08:20	22.0	5.08	100	DH59	17					
JUL 27	10:35	22.0	5.74	100	DH59	12					
JUL 27	13:45	22.0	5.78	MID X	DIP	11					
JUL 28	07:50	21.0	5.27	100	DH59	11					
JUL 30	09:15	22.0	5.28	100	DH59	12	183				
AUG 10	14:40	23.0	6.86 E	100	DH59	11					
AUG 13	08:05	18.0	6.48	100	DH59	10	213				
AUG 14	08:30	20.0	6.10	100	DH59	11					
AUG 17	19:20	22.0	6.12	100	DH59	10					
AUG 21	11:10	18.0	7.91	100	DH59	10	204				
AUG 28	09:45	21.0	6.13	100	DH59	18					
AUG 30	08:40	19.0	6.28	100	DH59	10	206				
AUG 31	18:55	19.0	4.88	100	DH59	13					
SEP 02	09:00	17.0	4.81	13.0 X	DH48	11	224				
SEP 06	09:15	23.0	4.57	100	DH59	11					
SEP 10	08:00	13.0	5.61	100	DH59	11	205				
SEP 13	13:20	12.0	8.13	100	DH59	13					
SEP 18	08:50	10.0	8.16	100	DH59	15	214				
SEP 22	10:55	10.0	8.81	100	DH59	12					
SEP 26	14:15	12.0	6.82	100	DH59	8	242				
SEP 28	11:15	10.0	6.82	100	DH59	11					
SEP 30	14:10	10.0	4.88	20.0 X	DIP	11					
OCT 04	10:10		4.84	100	DH59	13	256				
OCT 08	08:25		17.7	100	DH59	60					
OCT 08	09:30		17.8	100	DH59	55					
OCT 07	13:05		13.4	100	DH59	35	218				
OCT 08	08:10		11.0	100	DH59	18					
OCT 09	08:50		10.8	100	DH59	22					
OCT 11	08:45		10.4	100	DH59	14					
OCT 13	08:40		8.89	100	DH59	12					
OCT 17	14:25		10.8	100	DH59	14	232				
OCT 21	16:10		11.9	100	DH59	12					
OCT 25	17:10		22.1	100	DH59	20					
OCT 26	08:30		40.3	100	DH59	130	210				
OCT 30	11:00		28.4	100	DH59	161	206				
NOV 02	18:30	5.0	20.1	50.0 X	DH48	20	212				

NOTE : SINGLE VERTICAL LOCATED AT 100 METRES FOR 1984

DISCHARGE SYMBOL(S): B - ICE CONDITIONS E - ESTIMATED
VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

OLDMAN RIVER NEAR LETHBRIDGE - STATION NO. 05AD007

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1972	--CCCCCCCCCC	DUAL	2 310	JUN 02	8	NOV 06	173 000	JUN 02	3 180 000	13 000	13 000	---
1973	CCCCCCCCCCC	DUAL	750	MAY 19	2	JAN 06 *	19 700	MAY 20	189 000	841	6 820	90.6
1974	CCCCCCCCCCC	DUAL	1 750	JUN 18	4	OCT 02	103 000	JUN 18	1 710 000	6 970	6 670	51.9
1975	CCCCCCCCCCC	DUAL	7 980	JUN 21 *	4	AUG 26	1 980 000	JUN 21 *	5 760 000 *	23 500	11 000	44.3
1976	CCCCCCCCCCC	MANUAL	1 380	MAY 11	3	SEP 23	80 100	AUG 07	735 000	2 880	8 420	43.5
1977	CCCCCCCCCCC	MANUAL	106	JUN 13	3	JAN 08	416	JUN 11	11 800	40.6	7 880	47.0
1978	CCCCCCCCCC--	MANUAL	3 640	MAY 19	5	JAN 24	112 000	MAY 19	1 340 000	5 480	7 510	41.6
1979	CCCCCCCCC--	MANUAL	2 290	MAY 26	6	AUG 01	103 000	MAY 26	844 000	3 880	7 080	38.0
1980	---CCCCCCCP-	MANUAL	5 990	MAY 27	7	AUG 27	416 000	MAY 27	1 010 000	4 100	6 730	36.5
1981	--CCCCCCCC-	MANUAL	4 870	MAY 23	5	SEP 07	456 000	MAY 23	2 480 000	10 100	7 080	31.4
1982	--CCCCCCCP-	MANUAL	1 430	MAY 29	4	MAR 06	33 800	MAY 28	505 000	2 070	6 810	31.1
1983	--CCCCCCCC--	MANUAL	973	MAY 28	6	APR 12	22 400	MAY 26	134 000	548	6 100	31.8
1984	--CCCCCCCP-	MANUAL	304	JUN 1	6	APR 1	2 250	JUN 01	24 200	86.3	5 640	32.6
1985	---CCCCCCC--	MANUAL	1 170	SEP 14	4	AUG 29	11 800	MAY 27	184 000	---	---	---
1986	--CCCCCCCP-	MANUAL	2 040	MAY 30	3	JUL 11	81 900	MAY 30	735 000	3 000	5 480	31.6
1987	--CCCCCCC--	MANUAL	1 530	MAY 1	4	JUL 1	26 100	MAY 01	206 000	840	5 150	31.7
1988	--PCCCCCCP-	MANUAL	408	MAY 14	6	JUN 26	3 290	MAY 14	24 800	---	---	---

DUAL - MANUAL AND AUTOMATIC SAMPLING MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

SLOCAN RIVER NEAR WALDRON'S CORNER - STATION NO. 08AA033

SUSPENDED SEDIMENT FOR 1988

LOCATION: LAT 49 46 50 N LONG 114 11 00 W
DRAINAGE AREA: 1 440 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

TOTAL SUSPENDED SEDIMENT LOAD 2 420 TONNES FOR THE PERIOD APR 01 TO OCT 31

REMARKS:

DAY	APR DAILY DISCHARGE (m³/s)	APR MEAN CONCENTRATION (mg/L)	APR DAILY LOAD (t)	MAY DAILY DISCHARGE (m³/s)	MAY MEAN CONCENTRATION (mg/L)	MAY DAILY LOAD (t)	JUN DAILY DISCHARGE (m³/s)	JUN MEAN CONCENTRATION (mg/L)	JUN DAILY LOAD (t)	DAY
1	3.78 B	4	0.86	8.88	3 S	2.30	28.5	11	26.2	1
2	3.32	3	0.83	7.70	3	2.00	23.2	6 S	12.6	2
3	3.83	6	1.88	7.18	6 S	3.72	21.4	4	7.40	3
4	3.20	7 S	1.98	7.48	6	3.88	21.8	5 S	9.48	4
5	2.87	4	0.98	8.40	5 S	3.83	26.5	14	32.1	5
6	3.10	5	1.34	10.3	6 S	5.34	27.8	16 S	38.2	6
7	3.74	5	1.62	10.7	6	5.85	34.4	34 S	101	7
8	3.39	4	1.17	11.2	6	5.81	84.2	74 S	347	8
9	3.07	3	0.83	15.1	11 S	14.4	48.7	51 S	218	9
10	3.28	3	0.84	20.7	17 S	30.4	41.9	25	90.5	10
11	3.61	3	0.88	26.5	50 S	114	38.8	18	57.4	11
12	4.08	4 S	1.40	31.0	51 S	137	32.5	14 S	39.3	12
13	4.61	5	1.91	34.8	59 S	177	28.4	14	35.6	13
14	4.78	6	2.48	30.0	25 S	64.6	26.5	12	27.5	14
15	5.60	7	3.39	24.8	13 S	27.8	24.3	10	21.0	15
16	7.61	6	4.05	21.0 E	11 S	20.0	22.8	8	17.7	16
17	10.4	8	7.19	24.2 E	10	20.8	22.2	7 S	13.4	17
18	13.3	11 S	12.5	23.8 A	9 S	18.5	20.8	7	12.8	18
19	14.0	13 S	15.7	19.8	7 S	12.0	19.4	7	11.7	19
20	13.7	9 S	9.86	16.6	6 S	8.58	17.6	7 S	10.8	20
21	10.8	8 S	7.53	17.1	8 S	8.88	16.3	7	8.88	21
22	8.84	8	4.88	16.2	7	11.0	16.3	7 S	8.26	22
23	7.78	8 S	4.02	22.7	12 S	23.8	14.1	8	7.31	23
24	8.38	8	4.35	28.4	14	30.7	13.0	8	8.76	24
25	8.98	8 S	3.00	21.8	8	18.8	12.1	5	8.23	25
26	8.08	3 S	1.58	20.2	8 S	14.0	11.4	4	3.84	26
27	8.38	4 S	2.30	20.2	8 S	10.5	10.8	3	2.80	27
28	7.07	8 S	4.88	18.3	5	8.34	10.8	2 S	1.83	28
29	8.88	12	9.31	22.1	7	13.4	10.8	6	8.80	29
30	10.4	8 S	8.08	33.0	8 S	18.8	9.58	7 S	5.78	30
31				28.3	22 S	88.7				31
TOTAL	184.48		121.08	801.22		887.40	703.88		1 187.01	TOTAL

DAY	JUL DAILY DISCHARGE (m³/s)	JUL MEAN CONCENTRATION (mg/L)	JUL DAILY LOAD (t)	AUG DAILY DISCHARGE (m³/s)	AUG MEAN CONCENTRATION (mg/L)	AUG DAILY LOAD (t)	SEP DAILY DISCHARGE (m³/s)	SEP MEAN CONCENTRATION (mg/L)	SEP DAILY LOAD (t)	DAY
1	8.76	7	5.28	4.85	10	4.19	2.88	4	1.03	1
2	8.31	6	4.26	7.03	22	13.4	2.86	4	1.01	2
3	8.51	7	5.15	8.08	11	8.76	2.84	4	1.02	3
4	8.04	6	4.17	5.28	8	4.11	2.81	4	1.01	4
5	8.43	8	8.83	4.86	8	3.42	2.82	8	1.81	5
6	8.76	11	8.28	4.87	7	2.82	2.85	8	1.80	6
7	8.20	7	4.86	4.83	8	3.34	2.88	5	1.28	7
8	7.38	8	3.83	4.81	10	4.24	2.88	7	1.81	8
9	8.80	8	3.88	4.61	8	3.12	2.87	7	1.80	9
10	8.85	8	3.85	4.28	8	2.84	3.00	7	1.81	10
11	8.87	8	3.81	4.18	8	2.88	3.18	8	2.20	11
12	8.76	4	2.34	4.14	7	2.80	3.18	8	1.84	12
13	8.41	3	1.88	3.87	6	2.08	3.11	8	1.34	13
14	8.20	3	1.87	3.81	6	1.85	3.05	8	1.32	14
15	8.04	2	1.04	3.74	8	1.82	2.88	8	1.28	15
16	8.82	2	1.02	3.73	4	1.28	2.86	8	1.26	16
17	8.87	2	0.88	3.83	3	0.84	3.15	7	1.81	17
18	8.72	2 S	0.88	3.88	3	0.83	3.25	7	1.87	18
19	8.86	4	1.88	3.81	3	0.81	3.23	8	1.87	19
20	8.37	3	1.38	3.81	4	1.21	3.38	8	2.34	20
21	8.12	3 S	1.33	3.76	8	2.82	3.33	8	2.30	21
22	4.81	3	1.27	3.45	8	1.78	3.27	8	1.70	22
23	4.78	3	1.24	3.28	3	0.85	3.22	4	1.11	23
24	4.88	2	0.81	3.15	1	0.27	3.38	3	0.85	24
25	4.84	2	0.78	3.08	1 S	0.27	3.43	3	0.89	25
26	4.43	2	0.77	3.13	2	0.84	4.33	4 S	1.80	26
27	4.31	2	0.74	3.18	3	0.82	3.85	4	1.37	27
28	4.28	2	0.74	3.13	4	1.08	3.87	4	1.27	28
29	4.18	2	0.72	3.08	4	1.08	3.48	4	1.21	29
30	4.00	2	0.69	2.98	4	1.03	3.38	3	0.88	30
31	3.91	2	0.68	2.86	4 S	1.02				31
TOTAL	180.84		75.74	124.34		74.88	88.28		43.78	TOTAL

A - MANUAL GAUGE B - ICE CONDITIONS E - ESTIMATED S - SAMPLE(S) COLLECTED THIS DAY

OLDMAN RIVER NEAR WALDRON'S CORNER - STATION NO. 05AA023

SUSPENDED SEDIMENT FOR 1988

DAY	OCT DAILY DISCHARGE (m^3/s)	OCT MEAN CONCENTRATION (mg/L)	OCT DAILY LOAD (t)	NOV DAILY DISCHARGE (m^3/s)	NOV MEAN CONCENTRATION (mg/L)	NOV DAILY LOAD (t)	DEC DAILY DISCHARGE (m^3/s)	DEC MEAN CONCENTRATION (mg/L)	DEC DAILY LOAD (t)	DAY
1	3.37	3	0.87							1
2	3.33	3	0.86							2
3	3.33	3	0.87							3
4	3.31	3	0.87							4
5	3.36	3	0.86							5
6	3.23	3	0.86							6
7	3.16	3	0.85							7
8	3.12	3	0.84							8
9	3.06	3	0.83							9
10	3.06	3	0.83							10
11	3.02	3	0.82							11
12	3.00	3	0.82							12
13	2.97	3	0.81							13
14	2.93	3	0.81							14
15	2.98	3	0.77							15
16	3.55	12	3.88							16
17	3.77	16	5.21							17
18	3.39	10	2.93							18
19	3.19	6	1.66							19
20	3.14	6	1.63							20
21	3.06	5	1.33							21
22	3.13	5	1.36							22
23	3.06	4	1.06							23
24	3.00	2	0.52							24
25	2.97	2	0.51							25
26	3.13 B	3	0.81							26
27	3.16 B	2	0.84							27
28	2.86 B	2	0.51							28
29	2.86 B	1	0.23							29
30	3.16 B	2	0.55							30
31	3.33	2 S	0.56							31
TOTAL	97.88		32.08							TOTAL

B - ICE CONDITIONS

S - SAMPLE(S) COLLECTED THIS DAY

ALBERTA

OLDMAN RIVER NEAR WALDRON'S CORNER - STATION NO. 05AA023

INSTANTANEOUS SUSPENDED SEDIMENT FOR 19--8

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 04	10:00	3.0	3.05	8.2	DH59	7	223														
APR 12	10:00	4.5	4.10	8.2	DH59	4	221														
APR 18	14:30	5.5	12.8	8.2	DH59	12															
APR 19	10:30	3.5	13.8	8.2	DH59	13															
APR 20	11:15	3.0	12.8	40.0 K	DH48	8	188														
APR 21	10:15	4.0	10.4	8.2	DH59	7															
APR 23	11:00	4.0	7.24	8.2	DH59	8															
APR 25	17:00	8.0	8.54	8.2	DH59	4															
APR 26	10:00	3.5	8.07	8.2	DH59	2															
APR 27	14:00	8.5	8.68	8.2	DH59	3	197														
APR 28	10:00	6.5	7.28	8.2	DH59	6															
APR 30	18:30	7.5	8.78	8.2	DH59	6															
MAY 01	10:30	4.0	8.92	8.2	DH59	3															
MAY 03	09:45	4.0	7.28	8.2	DH59	7	170														
MAY 05	10:00	8.0	8.24	8.2	DH59	4															
MAY 06	11:00	8.0	10.8	8.2	DH59	7															
MAY 08	12:57	8.0	10.7	8.2	DH59	4	186														
MAY 08	17:00	10.0	14.2	8.2	DH59	12															
MAY 10	10:15	11.0	18.6	8.2	DH59	18															
MAY 11	08:30	8.0	28.1	8.2	DH59	51	143														
MAY 12	08:30	8.5	30.7	8.2	DH59	50															
MAY 13	09:15	5.5	35.8	8.2	DH59	85	132														
MAY 14	10:30	5.0	30.0	8.2	DH59	23															
MAY 15	10:15	5.0	28.1	8.2	DH59	13															
MAY 18	10:30	7.0	21.0 E	8.2	DH59	11															
MAY 18	08:55	5.0	23.8	52.0 K	DH48	8	142														
MAY 18	18:00	9.5	18.0	8.2	DH59	8															
MAY 20	10:00	7.0	16.8	8.2	DH59	8															
MAY 21	10:00	8.0	17.5	8.2	DH59	6															
MAY 23	15:30	14.0	22.4	8.2	DH59	12	154														
MAY 25	18:45	12.0	18.8	8.2	DH59	7															
MAY 27	10:15	6.5	20.8	8.2	DH59	8															
MAY 30	10:15	8.0	22.3	8.2	DH59	6	145														
MAY 31	09:00	5.5	31.3	8.2	DH59	28															
JUN 02	09:45	7.0	34.0	44.0 K	DH48	8	156														
JUN 04	10:30	9.5	31.8	8.2	DH59	8															
JUN 06	15:30	12.0	37.3	8.2	DH59	18															
JUN 07	15:00	9.0	33.8	8.2	DH59	35															
JUN 08	20:00	8.0	82.0	8.2	DH59	73															
JUN 09	15:30	10.0	47.6	8.2	DH59	43	135														
JUN 12	11:00	8.5	32.8	8.2	DH59	14															
JUN 17	20:00	15.0	21.6	8.2	DH59	7	165														
JUN 20	20:00	15.5	18.9	8.2	DH59	7															
JUN 22	20:15	16.0	14.9	8.2	DH59	7															
JUN 28	14:55	13.0	10.5	42.0 K	DH48	2	174														
JUN 30	20:00	15.0	8.20	8.2	DH59	7															
JUL 18	11:33	14.0	5.80	32.0 K	DH48	2	187														
JUL 21	16:15	18.0	5.14	8.2	DH59	3															
AUG 25	10:40	12.0	3.07	11.0 K	DH48	1	216														
AUG 31	13:30	11.5	2.98	MID K	DH48	4															
SEP 28	12:34	8.0	4.83	34.0 K	DH48	4															
OCT 31	11:14	3.0	3.28	32.0 K	DH48	2	229														

NOTE : SINGLE VERTICAL LOCATED AT 8.2 METRES FOR 1988

DISCHARGE SYMBOL(S): E - ESTIMATED
VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK

OLDMAN RIVER NEAR WALDRON'S CORNER - STATION NO. 05AA023

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1975	----PPPPPPP-	MANUAL	2 630	JUN 21 *	1	AUG 12	---	---	---	---	---	---
1976	---CCCCCCCCC	MANUAL	185	AUG 05	0	OCT 26 *	18 100	AUG 05 *	39 500	---	---	---
1977	CCCCCCCCCCCC	MANUAL	51	APR 05	0	JAN 05	85.5	MAY 11	1 380	---	---	---
1978	CCCCCCCCCCCC	MANUAL	230	MAR 30	1	DEC 11	887	MAY 22	17 000	5.40	5.40	---
1979	CCCCCCCCCC--	MANUAL	138	MAY 27	0	JUL 17	1 100	MAY 27	7 610	89.1	37.3	85.4
1980	--CCCCCCCP-	MANUAL	103	MAY 28	0	APR 03	577	APR 30	5 270	30.8	35.1	82.7
1981	--CCCCCCC--	MANUAL	705	MAY 25	1	OCT 14	11 100	MAY 25	83 400 *	25.5	33.8	40.8
1982	---PCCCC---	MANUAL	43	MAY 25	1	JUL 25	241	JUN 15	4 010	288	78.0	89.5
1983	---CCCCCC--	MANUAL	80	MAY 25	1	SEP 25	229	MAY 25	2 180	---	---	---
1984	---PCCCC---	MANUAL	147	MAY 15	1	JUL 17	388	MAY 15	1 840	---	---	---
1985	---CCCCCC--	MANUAL	104	JUN 6	1	JUL 30	611	JUN 05	3 130	---	---	---
1986	--PCCCCCCP-	MANUAL	843	MAY 21	1	SEP 4	5 880	MAY 29	33 500	---	---	---
1987	---CCCCCCP-	MANUAL	127	JUL 15	1	JUL 3	367	APR 30	2 880	---	---	---
1988	---CCCCCC--	MANUAL	73	JUN 6	1	AUG 25	347	JUN 05	2 420	---	---	---

MANUAL - MANUAL SAMPLING

E - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

PADDLE RIVER NEAR ROCHFORT BRIDGE - STATION NO. 07BB004

LOCATION: LAT 53 53 44 N LONG 115 02 27 W
DRAINAGE AREA: 525 km²
TYPE OF FLOW: REGULATED SINCE 1984
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
JUN 16	11:53	13.5	2.91	MID		DH48	114	283														
JUL 06	09:30	12.0	13.3	12.0	X	DH59	487	255	13	32	38	38	38	44	88	88	88	100		88	32	22
JUL 14	11:00	16.0	11.8	12.0	X	DH59	104	261														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK

PADDLE RIVER NEAR ROCHFORT BRIDGE - STATION NO. 07BB004

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	------PPPP--	MANUAL	422	JUL 14		10	OCT 31		---	---	---	---	---	---
1975	---PPPPPP---	MANUAL	1 270	MAY 05		5	JUN 17	*	---	---	---	---	---	---
1976	---PPPPPP---	MANUAL	662	APR 05		5	MAY 20		---	---	---	---	---	---
1977	---PPP-PP---	MANUAL	660	MAY 30		11	JUN 23		---	---	---	---	---	---
1978	---PPPPPPP--	MANUAL	1 430	JUN 15		14	AUG 28		---	---	---	---	---	---
1979	---PPPPPPP--	MANUAL	1 800	APR 24	*	5	AUG 20		---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	916	JUN 28		16	OCT 14		---	---	---	---	---	---
1981	---PPPPPPP--	MANUAL	78	APR 21		10	JUL 08		---	---	---	---	---	---
1982	-------PP-PP-	MANUAL	408	JUL 07		23	NOV 02		---	---	---	---	---	---
1983	------PP-P---	MANUAL	218	JUN 26		23	SEP 21		---	---	---	---	---	---
1985	----P-PPPP--	MANUAL	303	AUG 16		14	OCT 7		---	---	---	---	---	---
1986	---PPPPP--P-	MANUAL	54	NOV 6		10	AUG 28		---	---	---	---	---	---
1987	----PPPPPP--	MANUAL	75	MAY 22		7	JUL 13		---	---	---	---	---	---
1988	-----PP-----	MANUAL	487	JUL 6		104	JUL 14		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

PEACE RIVER AT DUNVEGAN BRIDGE - STATION NO. 07FD003

LOCATION: LAT 55 55 09 N LONG 118 38 19 W
DRAINAGE AREA: 130 000 km²
TYPE OF FLOW: REGULATED SINCE 1967
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 09	15:00	8.0	1270	300		D49	248	138	24	41	65	88	90	94	96	100				6	53	41
JUL 06	11:00	13.0	1830	MID	X	DH59	638	161	24	30	42	51	66	77	93	99	100			23	47	30
AUG 30	10:30	16.0	1270	MID	X	DH59	15	103														
OCT 18	10:13	7.0	1380	MID	X	DH59	13	106														

NOTE : SINGLE VERTICAL LOCATED AT 300 METRES FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

PEACE RIVER AT DUNVEGAN BRIDGE - STATION NO. 07FD003

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MAY-OCT MEAN LOAD (TONNES)	SUMMARY : MAY-OCT HISTORICAL MEAN LOAD (TONNES)	SUMMARY : MAY-OCT STANDARD ERROR OF MEAN %
1975	---PCCCCCC--	MANUAL	3 470	MAY 27	10	OCT 21	473 000	MAY 27 *	8 270 000 *	32 300	32 300	---
1976	---PPPPP----	MANUAL	804	MAY 06	117	APR 30	---	---	---	---	---	---
1977	-----P-P----	MANUAL	4 730	JUN 13 *	130	AUG 18	---	---	---	---	---	---
1978	----P---P---	MANUAL	242	MAY 23	221	SEP 13	---	---	---	---	---	---
1980	----------P--	MANUAL	118	OCT 15	118	OCT 15	---	---	---	---	---	---
1981	----------P--	MANUAL	33	OCT 22	33	OCT 22	---	---	---	---	---	---
1982	-----P-------	MANUAL	95	JUN 22	95	JUN 22	---	---	---	---	---	---
1983	---------P---	MANUAL	12	SEP 16	12	SEP 16	---	---	---	---	---	---
1984	--------P----	MANUAL	36	AUG 22	36	AUG 22	---	---	---	---	---	---
1985	-----P-P-P---	MANUAL	263	JUN 3	11	AUG 8	---	---	---	---	---	---
1986	------PPP----	MANUAL	47	JUL 9	6	SEP 12 *	---	---	---	---	---	---
1987	----P-P-PP---	MANUAL	250	MAY 13	45	SEP 8	---	---	---	---	---	---
1988	----P-PP-P---	MANUAL	836	JUL 6	13	OCT 18	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

PEACE RIVER AT PEACE POINT - STATION NO. 07KC001

LOCATION: LAT 59 08 50 N LONG 112 25 35 W
DRAINAGE AREA: 293 000 km²
TYPE OF FLOW: REGULATED SINCE 1968
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	PERCENT SILT	PERCENT CLAY
JUN 08	11:50	3.0	2810	351	D&S	418	187	35	50	66	78	87	91	95	99	100			9	41	50
JUN 08	11:55	3.0	2810	351	D&S	348															

NOTE : SINGLE VERTICAL LOCATED AT 351 METRES FOR 1988

PEACE RIVER AT PEACE POINT - STATION NO. 07KC001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MAY-OCT MEAN LOAD (TONNES)	SUMMARY : MAY-OCT HISTORICAL MEAN LOAD (TONNES)	SUMMARY : MAY-OCT STANDARD ERROR OF MEAN %
1967	----PCCCC---	MANUAL	2 060	MAY 24	30	SEP 21	2 530 000	JUN 07	82 700 000 *	---	---	---
1968	----CCCCC---	MANUAL	4 490	JUN 20	83	SEP 06	2 470 000	JUN 18	21 700 000	---	---	---
1969	----CCCCC---	MANUAL	1 030	MAY 15	135	JUL 04	877 000	MAY 07	13 900 000	---	---	---
1970	-P-PP-P--P--	MANUAL	507	MAY 06	42	FEB 23	---	---	---	---	---	---
1971	-----PCCC---	MANUAL	3 810	JUN 23	34	SEP 30	2 740 000	JUN 22 *	36 100 000	---	---	---
1972	P-PP-P-PPPP-	MANUAL	3 030	JUN 22	14	NOV 28 *	---	---	---	---	---	---
1973	-PPPP-PP-P--	MANUAL	1 180	MAY 10	27	MAR 27	---	---	---	---	---	---
1974	----P-PPPP--	MANUAL	2 190	MAY 05	51	SEP 28	---	---	---	---	---	---
1975	-----P-------	MANUAL	273	JUN 03	261	JUN 28	---	---	---	---	---	---
1976	-----PPPPP--	MANUAL	1 410	JUL 14	138	SEP 17	---	---	---	---	---	---
1977	----P----P--	MANUAL	383	MAY 06	105	OCT 28	---	---	---	---	---	---
1978	----P-P-----	MANUAL	1 080	MAY 12	235	JUL 18	---	---	---	---	---	---
1979	-----PP-P---	MANUAL	825	JUN 21	108	SEP 21	---	---	---	---	---	---
1980	----PP-P-P--	MANUAL	1 420	JUN 27	46	OCT 21	---	---	---	---	---	---
1981	----PPP-P-P-	MANUAL	850	MAY 18	35	SEP 14	---	---	---	---	---	---
1982	----P-PPP---	MANUAL	3 230	AUG 10	74	SEP 30	---	---	---	---	---	---
1983	-----P--P-P-	MANUAL	244	JUN 13	67	NOV 03	---	---	---	---	---	---
1984	---PPP-P-P--	MANUAL	2 320	JUN 15	31	AUG 27	---	---	---	---	---	---
1985	----P-P--P--	MANUAL	483	MAY 28	78	OCT 29	---	---	---	---	---	---
1986	----P---P---	MANUAL	598	MAY 21	16	SEP 4	---	---	---	---	---	---
1987	----P-PP----	MANUAL	8 950	AUG 8 *	85	JUL 24	---	---	---	---	---	---
1988	-----P-------	MANUAL	418	JUN 6	348	JUN 6	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

PEACE RIVER AT PEACE RIVER - STATION NO. 07HA001

SUSPENDED SEDIMENT FOR 1988

LOCATION: LAT 56 14 41 N LONG 117 18 48 W
DRAINAGE AREA: 186 000 km²
TYPE OF FLOW: REGULATED SINCE 1967
TYPE OF GAUGE: RECORDING

TOTAL SUSPENDED SEDIMENT LOAD 17 300 000 TONNES FOR THE PERIOD APR 13 TO OCT 31

REMARKS:

DAY	APR DAILY DISCHARGE (m³/s)	APR MEAN CONCENTRATION (mg/L)	APR DAILY LOAD (t)	MAY DAILY DISCHARGE (m³/s)	MAY MEAN CONCENTRATION (mg/L)	MAY DAILY LOAD (t)	JUN DAILY DISCHARGE (m³/s)	JUN MEAN CONCENTRATION (mg/L)	JUN DAILY LOAD (t)	DAY
1	2 020			2 870	408	84 480	3 200	188 S	31 000	1
2	3 080			2 810	813	184 000	3 180	177	33 300	2
3	2 840			2 730	514	121 000	3 080	181 S	32 700	3
4	2 110			2 730	524	124 000	3 000	173	39 900	4
5	2 080			2 610	433	97 800	2 840	148 S	35 700	5
6	2 110			2 540	388	84 700	2 680	125 S	22 300	6
7	1 840			2 540	415	91 100	2 630	229 S	41 200	7
8	1 680			2 490	371	78 800	2 710	778 S	182 000	8
9	1 680			1 850	203	34 200	3 480	2 080 S	818 000	9
10	1 880			1 890	130	19 000	3 390	1 830 S	885 000	10
11	1 880			1 730	144	21 800	3 330	1 780	808 000	11
12	1 830			2 180	323 S	80 300	3 830	2 250	704 000	12
13	1 790	310 S	32 500	2 820	684	155 000	4 270	2 730	1 010 000	13
14	1 870	188	24 200	2 840	884	217 000	4 000	1 870	948 000	14
15	1 850	226	36 160	2 800	880	220 000	3 880	1 350 S	426 000	15
16	1 840	234	36 200	2 840	841 S	239 000	3 430	1 030	306 000	16
17	2 000	234	40 480	3 480	1 980 S	584 000	3 300	868	181 000	17
18	2 080	238	43 000	3 490	3 770 S	1 140 000	3 210	808	188 000	18
19	2 170	243	45 800	3 200	1 880 S	520 000	3 080	432	114 000	19
20	2 280	247	48 000	3 030	1 160	304 000	2 880	404	104 000	20
21	2 380	248	48 700	2 880	857	187 000	2 870	380	82 400	21
22	2 370	257	52 800	2 840	822	127 000	2 780	303	73 000	22
23	2 320	251	50 300	2 300	432 S	85 800	2 690	287	57 500	23
24	2 420	253	53 800	2 180	358 S	48 300	2 480	215	48 100	24
25	2 350	208	42 400	2 100	207 S	37 800	2 420	186	38 900	25
26	2 350	213 S	43 200	2 480	388 S	83 800	2 220	147	28 200	26
27	2 370	210	43 000	2 830	321 S	72 800	2 130	118	21 700	27
28	2 380	224	46 300	2 680	308	66 300	2 010	108 S	18 800	28
29	2 400	218	44 800	2 380	293	60 300	2 150	118 S	21 800	29
30	2 800	386 S	83 800	2 240	270 S	52 300	2 280	307	80 700	30
31				2 180	191 S	35 000				31
TOTAL	63 250		788 100	78 480		5 230 000	83 130		6 217 100	TOTAL

DAY	JUL DAILY DISCHARGE (m³/s)	JUL MEAN CONCENTRATION (mg/L)	JUL DAILY LOAD (t)	AUG DAILY DISCHARGE (m³/s)	AUG MEAN CONCENTRATION (mg/L)	AUG DAILY LOAD (t)	SEP DAILY DISCHARGE (m³/s)	SEP MEAN CONCENTRATION (mg/L)	SEP DAILY LOAD (t)	DAY
1	2 840	1 270	279 000	1 880	73	9 970	1 440	18	2 240	1
2	2 810	1 450 S	314 000	1 390	80	7 210	1 440	18	1 880	2
3	2 180	1 010 S	188 000	1 300	49	5 800	1 210	13 S	1 380	3
4	2 000	1 080 S	187 000	1 540	41	5 480	1 280	12	1 310	4
5	1 840	1 370 S	218 000	1 840	36	5 100	1 100	14 S	1 330	5
6	2 210	1 670	318 000	1 780	36	5 440	1 180	18	1 800	6
7	2 430	1 720	361 000	1 780	36 S	5 880	1 040	18	1 380	7
8	2 340	1 400	283 000	1 770	36	5 810	1 080	18 S	1 480	8
9	2 480	1 110	238 000	1 760	38	5 900	1 200	30	3 070	9
10	2 290	632	126 000	1 780	38 S	6 000	1 480	21	2 630	10
11	2 010	324	86 300	1 670	33	4 780	1 830	33 S	2 910	11
12	2 180	358	86 800	1 400	33 S	2 780	1 430	17	2 080	12
13	2 470	740	168 000	1 450	32	2 780	1 340	13 S	1 850	13
14	2 450	1 890	392 000	1 480	24 S	3 070	1 880	15 S	3 010	14
15	2 830	2 110	534 000	1 410	32	2 880	1 880	18	2 180	15
16	2 820	1 880	424 000	1 340	18 S	1 850	1 830	17	2 380	16
17	2 880	871	218 000	1 480	18	2 280	1 830	17 S	2 380	17
18	2 420	884 S	118 000	1 430	17 S	2 100	1 880	17	2 440	18
19	2 310	388	77 400	1 280	15	1 880	1 470	14	1 780	19
20	2 330	324 S	85 200	1 270	18 S	1 880	1 380	14	1 880	20
21	2 150	288	47 800	1 430	28	3 210	1 530	18 S	2 510	21
22	2 180	184 S	34 300	1 140	28 S	2 580	1 870	23	3 120	22
23	2 130	127	23 400	1 320	22	2 320	1 800	17 S	2 380	23
24	1 890	83	16 000	1 370	19 S	2 080	1 820	12	1 880	24
25	1 850	82 S	13 800	1 800	19	2 480	1 810	18 S	2 330	25
26	1 900	81	13 300	1 440	20 S	2 480	1 410	12	1 480	26
27	2 050	86 S	15 800	1 450	17	2 130	1 400	12	1 480	27
28	2 010	92	16 000	1 800	12	1 880	1 840	18	2 400	28
29	2 080	93 S	16 800	1 320	14 S	1 800	1 480	32 S	3 810	29
30	1 930	91	15 800	1 280	18	2 010	1 480	32	3 780	30
31	1 840	84	13 400	1 410	16 S	2 190				31
TOTAL	70 000		4 843 800	45 440		112 780	42 880		81 380	TOTAL

S - SAMPLE(S) COLLECTED THIS DAY

ALBERTA

PEACE RIVER AT PEACE RIVER - STATION NO. 07HA001

SUSPENDED SEDIMENT FOR 1988

DAY	OCT DAILY DISCHARGE (m^3/s)	OCT MEAN CONCENTRATION (mg/L)	OCT DAILY LOAD (t)	NOV DAILY DISCHARGE (m^3/s)	NOV MEAN CONCENTRATION (mg/L)	NOV DAILY LOAD (t)	DEC DAILY DISCHARGE (m^3/s)	DEC MEAN CONCENTRATION (mg/L)	DEC DAILY LOAD (t)	DAY
1	1 610	23	3 000							1
2	1 620	24	3 360							2
3	1 380	16	2 150							3
4	1 340	15	1 740							4
5	1 580	19	2 660							5
6	1 580	16	2 430							6
7	1 450	14	1 750							7
8	1 490	12	1 840							8
9	1 640	15	2 130							9
10	1 440	12	1 490							10
11	1 380	10	1 200							11
12	1 580	11 S	1 800							12
13	1 650	15	2 140							13
14	1 630	15 S	2 110							14
15	1 530	13	1 720							15
16	1 580	11	1 510							16
17	1 580	11 S	1 470							17
18	1 540	12	1 600							18
19	1 500	10 S	1 370							19
20	1 630	12	1 880							20
21	1 610	13 S	1 810							21
22	1 580	13	1 880							22
23	1 500	10	1 370							23
24	1 550	11	1 570							24
25	1 730	13	1 790							25
26	1 730	13	1 790							26
27	1 710	10	1 480							27
28	1 600	10	1 480							28
29	1 580	9	1 310							29
30	1 570	9	1 300							30
31	1 700	10	1 470							31
TOTAL	49 010		58 480							TOTAL

S - SAMPLE(S) COLLECTED THIS DAY

PEACE RIVER AT PEACE RIVER - STATION NO. 07HA001

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1984

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 13	09:25	5.0	1780	224	D74	321	132														
APR 26	10:00		2390	224	D74	312	144														
APR 30	14:30		3830	224	D74	358	144														
MAY 12	10:25		2320	224	D74	372	188														
MAY 16	10:00	13.0	3950	224	D74	677	132	12	16	27	37	60	81	88	98	100			19	66	16
MAY 17	16:15	12.0	3800	224	D74	3170	148	20	27	40	48	71	88	94	98	100			12	81	27
MAY 18	14:57	11.0	3480	224	D74	2760	167	24	35	44	56	78	96	98	100				4	88	28
MAY 19	15:00	11.0	3160	224	D74	1880	183	28	34	48	62	83	97	100					3	83	34
MAY 23	17:40	11.0	2280	224	D74	389															
MAY 24	14:52	12.0	2140	224	D74	238															
MAY 25	16:43	14.0	2270	224	D74	211															
MAY 26	14:46	14.0	2630	224	D74	319	152														
MAY 27	16:25	13.0	2880	224	D74	319															
MAY 30	14:50	14.0	2260	224	D74	272															
MAY 31	14:55	15.0	2170	224	D74	174															
JUN 01	14:57	15.0	2230	224	D74	169	151														
JUN 03	15:34	14.5	2060	224	D74	142															
JUN 06	14:45	13.5	2060	224	D74	141															
JUN 06	14:15	12.0	2130	224	D74	118															
JUN 07	14:45	12.0	2160	224	D74	253															
JUN 08	15:50	13.0	3060	224	D74	933	147	33	39	45	55	68	80	87	97	100			20	50	30
JUN 09	14:50	12.0	3490	224	D74	2110	217	19	33	48	60	80	92	97	98	100			4	66	33
JUN 10	15:00	14.0	3440	224	D74	1660	183	26	31	46	52	65	74	79	91	98	100		28	43	31
JUN 15	15:15	17.0	3660	224	D74	1350	143	25	33	49	67	73	83	92	98	100			17	50	33
JUN 20	15:30		2050	224	D74	107															
JUN 25	15:15	16.0	2170	224	D74	117															
JUL 02	15:30	17.0	2620	224	D74	1380	148	35	45	54	75	87	92	96	98	100			8	47	45
JUL 03	15:15	16.0	2190	224	D74	974	100	25	37	54	63	80	92	95	98	100			6	56	37
JUL 04	09:00	15.0	2050	224	D74	1040	158	31	46	59	68	82	88	92	98	100			12	48	40
JUL 05	14:55	17.0	1880	224	D74	1410	183	33	46	65	78	91	96	97	100				4	47	48
JUL 18	17:30	17.0	2480	224	D74	484	148	24	33	50	63	81	87	91	98	100			13	55	32
JUL 20	19:15	18.0	2370	224	D74	319	136	25	36	43	60	81	71	78	84	100			28	43	28
JUL 22	14:45	17.0	2170	224	D74	173															
JUL 26	14:05	17.0	1940	224	D74	85															
JUL 27	14:30	18.0	2070	224	D74	90	140														
JUL 29	15:00	18.0	2080	224	D74	83															
AUG 07	13:10	18.0	1780	224	D74	38	126														
AUG 10	15:00	18.0	1830	224	D74	38															
AUG 12	14:15	18.0	1410	224	D74	33															
AUG 14	15:45	17.0	1900	224	D74	38	126														
AUG 16	16:45	17.0	1380	224	D74	15															
AUG 18	13:00	17.0	1430	224	D74	17															
AUG 20	16:00	17.0	1380	224	D74	20															
AUG 22	14:00	17.0	1080	224	D74	38	134														
AUG 24	16:20	17.0	1300	224	D74	18															
AUG 28	15:30	17.0	1380	224	D74	20															
AUG 29	13:35	17.0	1320	224	D74	14															
AUG 30	16:00	17.0	1280	224	D74	16	112														
AUG 31	10:30	16.0	1480	224	D74	16															
SEP 03	21:00	16.0	1200	224	D74	12															
SEP 05	20:00	15.0	1030	224	D74	16															
SEP 08	15:00	14.5	1080	224	D74	17	120														
SEP 11	17:15	14.0	1530	224	D74	22															
SEP 13	12:04	15.0	1380	224	D74	12															
SEP 14	12:00	13.5	1560	224	D74	16															
SEP 17	16:15	13.0	1620	224	D74	17															
SEP 21	12:10	11.5	1670	224	D74	20	113														
SEP 23	12:08	11.0	1660	224	D74	17	110														
SEP 23	15:35	11.0	1690	224	D74	13	108														
SEP 25	17:15	10.0	1800	224	D74	10	111														
SEP 26	15:10		1810	224	D74	22	117														
OCT 12	12:10	10.0	1880	224	D74	11	112														
OCT 14	13:00	11.0	1830	224	D74	15	118														
OCT 17	12:10	13.0	1880	224	D74	10	113														
OCT 17	13:40	10.0	1840	224	D74	12	111														
OCT 18	12:10	13.0	1890	224	D74	10	118														
OCT 31	12:10	7.0	1810	224	D74	13	110														

NOTE : SINGLE VERTICAL LOCATED AT 224 METRES FOR 1984

ALBERTA

PEACE RIVER AT PEACE RIVER - STATION NO. 07HA001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : JAN-DEC MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1966	-----CCCCC--	MANUAL	3 800	AUG 30	18	OCT 28	1 080 000	AUG 30	12 800 000	---	---	---
1967	----PCCCCCCC	MANUAL	3 210	MAY 19	10	SEP 19	1 440 000	JUN 04	31 800 000	---	---	---
1968	CCC-CCCCCC--	MANUAL	7 080	JUN 14	23	JAN 05	3 800 000	JUN 14	18 700 000	---	---	---
1969	CCC-CCCCCCCC	MANUAL	4 800	MAY 01	11	DEC 10	1 830 000	MAY 02	12 800 000	---	---	---
1970	CCCCCCCCCCCC	MANUAL	3 870	APR 18	9	SEP 21	837 000	JUN 05	16 800 000	45 200	45 200	---
1971	CCCCCCCCCCCC	MANUAL	6 930	JUN 18	9	NOV 18	5 240 000	JUN 18	88 100 000	188 000	102 000	55.8
1972	CCCCCCCCCCCC	MANUAL	6 080	JUN 16	3	MAR 17	14 600 000	JUN 14 *	78 300 000 *	208 000	137 000	35.2
1973	CCCCCCCCCCCC	MANUAL	3 300	APR 13	2	SEP 11 *	1 130 000	APR 14	31 800 000	86 300	136 000	0.0
1974	CCCCCCCCCCCC	MANUAL	6 310	APR 23	13	NOV 03	4 030 000	APR 28	69 000 000	182 000	132 000	0.0
1975	CCCCCCCCCCCC	MANUAL	3 220	JUL 02	7	FEB 20	1 370 000	JUL 01	18 800 000	48 180	118 000	0.0
1976	CCCCCCCCCCCC	MANUAL	5 000	AUG 18	10	JAN 23	3 330 000	AUG 18	61 800 000	142 000	131 000	0.0
1977	CCCCCCCCCCCC	MANUAL	6 380	JUN 11	20	FEB 08	3 290 000	JUN 11	42 400 000	116 000	121 000	0.0
1978	-PP-CCCCC--P	MANUAL	3 020	JUL 13	2	SEP 05	784 000	JUN 17	11 100 000	---	---	---
1979	--P-PCC-PCP-	MANUAL	4 180	MAY 18	10	MAR 28	1 430 000	MAY 18	23 200 000	---	---	---
1980	--PPCCCCCC--	MANUAL	2 630	JUN 09	7	MAR 13	1 830 000	JUN 09	17 700 000	---	---	---
1981	PPP-CCCCCC--	MANUAL	7 410	MAY 08	12	JAN 27	1 710 000	MAY 09	16 600 000	---	---	---
1982	--P-CCCC--P-	MANUAL	5 140	AUG 04 *	28	NOV 01	4 780 000	JUL 17	40 300 000	---	---	---
1983	----CCPPCC--	MANUAL	4 640	JUN 22	28	SEP 22	1 880 000	JUL 17	28 300 000	---	---	---
1985	---PCCCCCCP-	MANUAL	824	MAY 20	13	NOV 4	378 000	MAY 23	8 090 000	---	---	---
1986	--P-CCCCCC--	MANUAL	3 740	MAY 28	13	OCT 30	1 880 000	MAY 28	22 800 000	---	---	---
1987	---PCCCCCC--	MANUAL	4 880	AUG 8	17	OCT 22	12 600 000	AUG 03	48 700 000	---	---	---
1988	---PCCCCCC--	MANUAL	3 780	MAY 18	10	OCT 17	1 140 000	MAY 18	17 300 000	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

PEMBINA RIVER AT JARVIE - STATION NO. 07BC002

LOCATION: LAT 54 27 05 N LONG 113 59 30 W
DRAINAGE AREA: 13 100 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 14	11:30	8.0	14.8	MID	X	DIP	61	202														
APR 25	14:40	10.0	25.5	38.0		DH59	48	202														
MAY 24	18:00	20.0	8.03	MID	X	DIP	4	234														
JUN 20	13:30	18.0	35.1	38.0		DH59	183	198														
JUL 18	15:00	22.0	78.8	38.0		DH59	288	216	30	38	52	72	80	85	92	98	100			15	47	38
AUG 16	11:00	19.0	18.4	38.0		DH59	28	199														
SEP 12	18:00	16.0	6.71	38.0		DH59	6	217														
OCT 03	14:10	8.0	18.0	38.0		DH48	11	202														
OCT 31	14:30	0.0	5.81	38.0		DH48	6	225														

NOTE : SINGLE VERTICAL LOCATED AT 38.0 METRES FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

PEMBINA RIVER AT JARVIS - STATION NO. 07EC002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	SUMMARY : HISTORICAL MEAN LOAD (TONNES)	SUMMARY : STANDARD ERROR OF MEAN %
1976	---PP-P-P---	MANUAL	534	APR 14		18	SEP 24		---	---	---	---	---	---
1977	---PPPP-P---	MANUAL	2 120	MAY 11		60	SEP 26		---	---	---	---	---	---
1978	---PPP-PP-P-	MANUAL	812	JUN 16		31	AUG 31		---	---	---	---	---	---
1979	---PPPPPP---	MANUAL	1 800	APR 26		11	SEP 19		---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	3 600	APR 17	*	41	OCT 17		---	---	---	---	---	---
1981	---PPPPPPP--	MANUAL	223	APR 10		4	OCT 05		---	---	---	---	---	---
1982	------P-P----	MANUAL	439	AUG 30		230	JUN 11		---	---	---	---	---	---
1983	----PPPP-P--	MANUAL	1 030	MAY 09		11	OCT 31		---	---	---	---	---	---
1984	-----PPP-PP--	MANUAL	439	JUN 11		3	SEP 4	*	---	---	---	---	---	---
1985	---PPPPPP---	MANUAL	1 580	APR 10		14	JUL 30		---	---	---	---	---	---
1986	---PPPPPP-P-	MANUAL	309	JUN 3		48	SEP 22		---	---	---	---	---	---
1987	---PPPPPP---	MANUAL	307	AUG 18		8	SEP 23		---	---	---	---	---	---
1988	---PPPPPPP--	MANUAL	395	JUL 18		4	MAY 24		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

PEMBINA RIVER NEAR ENTWISTLE - STATION NO. 07EB002

LOCATION: LAT 53 38 18 N LONG 115 00 14 W
DRAINAGE AREA: 4 430 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	PERCENT SILT	PERCENT CLAY
APR 27	13:00	12.0	18.6	48.0		DH59	27	140														
JUN 01	11:40	15.0	5.39	48.0		DIP	3	200														
JUL 22	10:20	20.0	14.6	48.0		DH59	13	159														
JUL 30	12:00	18.0	21.6	48.0		DH59	28	169														
AUG 17	11:00	18.0	21.3	MID	X	DH48	14	178														
SEP 14	11:00	15.0	9.75	MID	X	DH48	13	184														
OCT 05	10:30	8.0	14.1	30.0	X	DH48	4	187														

NOTE : SINGLE VERTICAL LOCATED AT 48.0 METRES FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

PEMBINA RIVER NEAR ENTWISTLE - STATION NO. 07EB002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	SUMMARY : HISTORICAL MEAN LOAD (TONNES)	SUMMARY : STANDARD ERROR OF MEAN %
1974	------PPPP--	MANUAL	17	JUL 23		2	OCT 28	*	---	---	---	---	---	---
1975	----PPPPP---	MANUAL	51	MAY 15		3	AUG 19		---	---	---	---	---	---
1976	---PPPPP----	MANUAL	23	AUG 19		7	JUL 19		---	---	---	---	---	---
1977	----PPPPP---	MANUAL	128	MAY 05		10	JUN 23		---	---	---	---	---	---
1978	----PPPP----	MANUAL	333	JUN 19		8	AUG 31		---	---	---	---	---	---
1979	-----PPPP---	MANUAL	11	JUN 11		8	AUG 13		---	---	---	---	---	---
1980	---PPPPP----	MANUAL	353	APR 14		10	AUG 18		---	---	---	---	---	---
1981	---PP-PP----	MANUAL	155	MAY 11		8	JUL 05		---	---	---	---	---	---
1982	------PP-PP--	MANUAL	78	JUL 26		2	SEP 27		---	---	---	---	---	---
1983	---P-P-PPP--	MANUAL	155	JUN 27		2	SEP 26		---	---	---	---	---	---
1984	---P--P-P---	MANUAL	48	SEP 10		8	JUL 4		---	---	---	---	---	---
1985	---PPPPPPPP-	MANUAL	303	APR 12		3	JUL 18		---	---	---	---	---	---
1986	---PPPPPPPP-	MANUAL	3 140	JUL 21	*	7	JUN 11		---	---	---	---	---	---
1987	---PPPPPP-P-	MANUAL	388	APR 14		8	NOV 3		---	---	---	---	---	---
1988	---P-PPPPP--	MANUAL	26	JUL 20		3	JUN 1		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

PINE CREEK NEAR GRASSLAND - STATION NO. 07CA005

LOCATION: LAT 54 48 12 N LONG 113 46 34 W
DRAINAGE AREA: 1 480 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 17	12:05	5.0	0.303	---	DIP	6	570														
JUN 07	10:35	15.0	0.024	10LB	DIP	17	584														
JUL 05	17:15	16.0	0.213	10LB	DH48	13	604														

NOTE : SINGLE VERTICAL LOCATED AT 10LB (ONE QUARTER THE DISTANCE FROM THE LEFT BANK) FOR 1988

PINE CREEK NEAR GRASSLAND - STATION NO. 07CA005

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1974	-------PP---	MANUAL	81	AUG 13	48	SEP 17	---	---	---	---	---	---
1975	---P--PPP---	MANUAL	198	APR 21	18	APR 18	---	---	---	---	---	---
1976	---PPPPPPP---	MANUAL	883	APR 12 *	9	JUN 15	---	---	---	---	---	---
1977	----PPPPPP--	MANUAL	84	JUN 07	31	AUG 10	---	---	---	---	---	---
1978	---PPPPPPP---	MANUAL	204	JUN 02	41	JUN 27	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	118	MAY 02	18	OCT 31	---	---	---	---	---	---
1980	---PPPPPP---	MANUAL	92	SEP 25	33	JUN 04	---	---	---	---	---	---
1981	---PPPP-P---	MANUAL	65	APR 21	8	SEP 25 *	---	---	---	---	---	---
1982	------PPP----	MANUAL	35	AUG 04	13	JUN 07	---	---	---	---	---	---
1983	-------P-----	MANUAL	20	AUG 08	30	AUG 08	---	---	---	---	---	---
1984	----PPPPP---	MANUAL	45	JUN 7	8	SEP 6	---	---	---	---	---	---
1985	---PPPPP----	MANUAL	343	APR 9	9	AUG 27	---	---	---	---	---	---
1986	---PPPPPP---	MANUAL	43	JUN 3	30	MAY 6	---	---	---	---	---	---
1987	---PPPP------	MANUAL	67	APR 14	19	MAY 5	---	---	---	---	---	---
1988	----PPP------	MANUAL	17	JUN 7	6	MAY 17	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

PENTON RIVER ABOVE BOYER RIVER - STATION NO. 07JF003

LOCATION: LAT 58 37 53 N LONG 119 15 23 W
DRAINAGE AREA: 3 440 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: MANUAL

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 21	08:20	0.5	7.80	10.0 X	DH48	103	287														
APR 28	08:45	3.0	13.7	10.0 X	DH48	403	337	32	38	60	77	85	91	98	100				8	53	38
MAY 06	07:10	3.0	57.0 H	10.0 X	DH48	2710	181	31	38	58	68	82	88	95	100				11	50	39
JUN 02	14:45	13.0	56.1	10.0	DH59	1130	143	17	23	36	51	65	76	88	93	100			26	53	33
JUN 23	13:35	17.5	27.1	10.0	DH59	387	141	28	33	62	68	73	78	84	98	100			21	46	33
JUL 26	08:55	18.0	18.6	10.0	DH59	266	152	33	38	63	76	80	88	88	98	100			14	48	38
AUG 29	08:10	14.0	11.4	10.0	DH59	138	184														
SEP 28	07:57	7.0	5.10	10.0	DH48	37	199														
NOV 03	13:20	0.0	3.81 B	10.0	DH48	18	309														

NOTE : SINGLE VERTICAL LOCATED AT 10 METRES FOR 1988

DISCHARGE SYMBOL(S): B - ICE CONDITIONS H - DAILY MEAN
VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

PONTON RIVER ABOVE BOYER RIVER - STATION NO. 07JF003

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PP-------	MANUAL	1 880	APR 29		38	APR 22		---	---	---	---	---	---
1976	---PPPPPPP--	MANUAL	3 420	APR 28		18	OCT 27		---	---	---	---	---	---
1977	---P-PP-PP--	MANUAL	1 050	APR 28		13	OCT 06		---	---	---	---	---	---
1978	----PPPP-P--	MANUAL	488	MAY 09		20	AUG 03		---	---	---	---	---	---
1979	----PPPPP-P-	MANUAL	2 200	MAY 18		7	SEP 27		---	---	---	---	---	---
1980	-----PPP----	MANUAL	80	JUL 03		5	AUG 08	*	---	---	---	---	---	---
1981	----PP-PPP--	MANUAL	393	MAY 27		7	SEP 08		---	---	---	---	---	---
1982	----PPPP-P--	MANUAL	2 760	MAY 04		6	AUG 25		---	---	---	---	---	---
1983	----PP-PPP--	MANUAL	321	MAY 05		8	SEP 01		---	---	---	---	---	---
1984	----PPPPP---	MANUAL	5 070	JUL 4		27	MAY 4		---	---	---	---	---	---
1985	----PPPPPP--	MANUAL	728	JUL 23		23	OCT 30		---	---	---	---	---	---
1986	----PPPPP---	MANUAL	3 540	MAY 13		33	SEP 23		---	---	---	---	---	---
1987	----PPPPP---	MANUAL	5 770	MAY 4	*	84	AUG 28		---	---	---	---	---	---
1988	---PPPPPP-P-	MANUAL	2 710	MAY 8		14	NOV 3		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

RAM RIVER NEAR THE MOUTH - STATION NO. 05DC008

LOCATION: LAT 52 21 53 N LONG 115 28 33 W
DRAINAGE AREA: 1 880 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 05	08:30	3.0	8.08	13.0	K DN48	4	350														
JUN 02	08:05	7.0	7.04	18.0	K DN48	21	312														
JUN 10	13:40	8.0	40.0	45.0	K DN88	438	210	31	47	87	80	91	95	99	100				4	49	47
JUN 16	12:30	12.0	18.0	38.0	X DN48	43	243														
JUN 27	16:40	20.0	11.1	28.0	K DN48	12	291														
JUL 25	16:05	18.0	10.2	28.0	K DN48	10	288														
AUG 22	15:40	13.0	23.8	14.0	K DN48	38	248														
SEP 22	08:35	6.0	13.5	18.0	K DN48	8	290														
OCT 11	15:35	7.0	12.0	30.0	K DN48	10	288														
OCT 31	16:40	2.0	8.70	30.0	K DN48	12	318														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

RAM RIVER NEAR THE MOUTH - STATION NO. 05DC008

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1976	---PPPPPP---	MANUAL	356	AUG 12		12	APR 28		---	---	---	---	---	---
1977	---PPPPPP---	MANUAL	242	MAY 26		11	SEP 15		---	---	---	---	---	---
1978	---PPPPPPP--	MANUAL	384	MAY 23		4	SEP 26		---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	43	MAY 22		0	AUG 14	*	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	1 500	JUN 05		8	OCT 29		---	---	---	---	---	---
1981	---PPP-PPP--	MANUAL	142	MAY 28		1	SEP 28		---	---	---	---	---	---
1982	----PPP-PP---	MANUAL	685	JUL 08		1	SEP 14		---	---	---	---	---	---
1983	----PPPPP----	MANUAL	1 330	MAY 30		2	SEP 27		---	---	---	---	---	---
1984	---PPPPPP----	MANUAL	38	JUN 20		1	AUG 20		---	---	---	---	---	---
1985	-----PPPP----	MANUAL	184	AUG 22		18	JUL 18		---	---	---	---	---	---
1986	----PPPPP-P--	MANUAL	2 490	MAY 27	*	4	SEP 23		---	---	---	---	---	---
1987	---P-PPP-P---	MANUAL	315	JUL 30		2	OCT 5		---	---	---	---	---	---
1988	----PPPPPP---	MANUAL	438	JUN 10		4	MAY 9		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

RED DEER RIVER AT DRUMHELLER - STATION NO. 05CE001

LOCATION: LAT 51 28 08 N LONG 112 42 30 W
DRAINAGE AREA: 24 600 km²
TYPE OF FLOW: REGULATED SINCE 1983
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.063	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 11	10:00	2.0	51.6	MID		DH59	524	252	27	38	60	70	85	95	98	100						
MAY 04	08:50	8.0	38.5	MID		DH59	11	245														
MAY 31	11:20	14.0	33.0	MID		DH48	12	196														
JUN 28	08:30	20.0	36.6	MID		DH59	16	189														
JUL 27	10:00	22.0	25.2	10LB	K	DH48	11	179														
AUG 30	08:45	17.0	60.6	MID		DH59	28	181														
SEP 27	08:30	7.0	30.0	30RB	X	DH48	126	221														
NOV 02	10:10	2.0	22.9	MID		DH48	28	259														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

RED DEER RIVER AT DRUMHELLER - STATION NO. 05CE001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	HISTORICAL STANDARD ERROR OF MEAN %
1976	-PPCCCCCCCCC	MANUAL	4 780	MAY 05	0	FEB 21 *	115 000	APR 21	807 000	---	---	---
1976	PPPCCCCCCCPP	MANUAL	2 480	JUN 14	3	OCT 01	18 400	APR 13	184 000	---	---	---
1977	CCCCCCCCCCCC	MANUAL	5 870	MAY 23	4	DEC 16	88 800	MAY 23	382 000	1 580	1 580	---
1978	CCCCCCCCCCCC	MANUAL	7 780	SEP 08	2	JAN 05	40 100	SEP 08	854 000	2 870	3 130	25.4
1979	CCCCCCCCCC--	MANUAL	3 970	JUL 23	2	AUG 19	16 000	JUL 23	110 000	447	1 570	40.9
1980	--CCCCCCCC--	MANUAL	5 520	JUL 28	2	MAY 16	49 500	AUG 08	833 000	3 400	2 030	31.8
1981	--PCCCCCCCP-	MANUAL	17 900	MAY 07 *	4	OCT 06	144 000	AUG 01 *	1 220 000 *	---	---	---
1982	--CCCCCCCC--	MANUAL	3 330	JUL 03	5	SEP 23	76 300	JUL 08	858 000	3 800	2 320	35.0
1983	---CCCCCCC--	MANUAL	5 330	JUL 08	1	OCT 11	84 000	JUL 08	433 000	---	---	---
1984	---CCCCCCC--	MANUAL	2 380	JUN 10	8	APR 30	7 170	JUN 08	110 000	---	---	---
1985	---PPPPPPP--	MANUAL	1 460	APR 5	5	JUL 18	---	---	---	---	---	---
1986	---PPPPPPPP-	MANUAL	1 320	AUG 12	8	APR 21	---	---	---	---	---	---
1987	---PPPPPPPP-	MANUAL	1 080	APR 7	8	MAY 28	---	---	---	---	---	---
1988	---PPPPPP-P-	MANUAL	524	APR 11	11	MAY 4	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

RED DEER RIVER AT RED DEER - STATION NO. 05CC002

LOCATION: LAT 52 16 36 N LONG 113 48 57 W
DRAINAGE AREA: 11 600 km²
TYPE OF FLOW: REGULATED SINCE 1983
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.063	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 24	09:50	3.0	20.3	10LB	DH59	19	256														
APR 19	08:25	7.5	34.7	10LB	DH59	9	248														
MAY 11	14:50	15.0	18.8	10LB	DH59	5	240														
JUN 08	10:55	14.0	13.2	10LB	DH59	3	243														
JUN 22	15:55	16.0	58.6	10LB	DH59	30	223														
JUL 07	09:00	14.0	74.7	10LB	DH59	36	221														
AUG 11	08:40	15.0	68.7	10LB	DH59	17	213														
SEP 14	10:00	15.0	30.4	10LB	DH59	2	215														
OCT 05	10:10	10.0	46.2	10LB	DH59	4	234														
NOV 02	10:10	5.0	22.6	10LB	DH59	4	234														

NOTE : SINGLE VERTICAL LOCATED AT 10LB (ONE QUARTER THE DISTANCE FROM THE LEFT BANK) FOR 1988

RED DEER RIVER AT RED DEER - STATION NO. 05CC002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)			SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : APR-OCT MEAN LOAD (TONNES)	SUMMARY : APR-OCT HISTORICAL MEAN LOAD (TONNES)	SUMMARY : APR-OCT STANDARD ERROR OF MEAN %
1970	.------PP------	MANUAL	103	JUN 04		12	JUL 17		---	---		---	---	---	---
1971	---CCCCCCCCCC	MANUAL	1 460	APR 15		0	OCT 13	*	41 400	APR 15		274 000	1 270	1 270	---
1972	CCCCCCCCCCCC	MANUAL	2 780	JUN 28		0	AUG 29		184 000	JUN 28	*	506 000	2 340	1 810	38.8
1973	CCCCCCCCCCCC	MANUAL	1 390	MAY 26		3	SEP 08		31 700	MAY 26		222 000	1 010	1 540	28.4
1974	--CCCCCCCC--	MANUAL	1 460	JUN 18		1	OCT 28		26 800	JUN 18		352 000	1 650	1 570	18.4
1975	--PCCCCCCC--	MANUAL	426	APR 21		1	APR 14		7 480	APR 20		58 800	285	1 310	28.2
1976	---CCCCCCCC-	MANUAL	838	AUG 11		1	OCT 30		7 140	AUG 11		80 400	233	1 130	29.4
1977	---CCCCCCCCC	MANUAL	263	MAY 17		1	DEC 14		3 600	APR 06		82 000	242	1 000	30.6
1978	CCCCCCCCCCC	MANUAL	1 370	JUN 07		0	NOV 07		21 800	JUN 07		131 000	585	850	26.8
1979	PP-CCCCCCCP-	MANUAL	759	MAY 26		2	SEP 14		7 460	MAY 26		47 500	222	889	28.1
1980	--CCCCCCCC--	MANUAL	1 140	APR 16		4	MAR 27		19 800	APR 16		142 000	882	848	26.8
1981	---CCCCCCC--	MANUAL	3 090	JUL 31	*	4	APR 16		148 000	JUL 31		740 000	3 480	1 080	26.8
1982	---CCCCCCC--	MANUAL	860	APR 23		2	OCT 25		19 500	JUL 08		208 000	863	1 080	26.8
1983	---CCCCCCC--	MANUAL	806	APR 26		2	AUG 13		10 400	APR 27		48 400	326	1 010	26.9
1984	--PCCCCCCC--	MANUAL	52	SEP 26		2	JUN 6		235	SEP 23		6 350	28.0	840	27.8
1985	---PPPPPPPP-	MANUAL	143	SEP 13		2	MAY 28		---	---		---	---	---	---
1986	---PPPPPPPP-	MANUAL	524	MAY 21		3	NOV 4		---	---		---	---	---	---
1987	----PPP-P-P-	MANUAL	14	JUN 2		4	NOV 5		---	---		---	---	---	---
1988	--PPPPPPPPP-	MANUAL	36	JUL 7		2	SEP 14		---	---		---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

RED DEER RIVER BELOW BURNT TIMBER CREEK - STATION NO. 05CA009

LOCATION: LAT 51 38 48 N LONG 115 01 05 W
DRAINAGE AREA: 3 280 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	PERCENT SILT	PERCENT CLAY
MAY 16	14:00		24.1	10LB	K	DH48	8	217														
JUN 21	13:50		34.8	10LB	K	D49	8	210														
JUL 28	10:25		33.0	10LB	K	DH48	14	218														
AUG 29	12:55		30.8	MID	K	D49	25	207														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK

RED DEER RIVER BELOW BURNT TIMBER CREEK - STATION NO. 05CA009

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)			SAMPLED CONCENTRATION MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)			SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	SUMMARY : HISTORICAL MEAN LOAD (TONNES)	SUMMARY : STANDARD ERROR OF MEAN %
1974	-------P-P---	MANUAL	43	JUL 28		8	SEP 03		---	---		---	---	---	---
1975	-----P-P------	MANUAL	24	JUL 31		2	MAY 28		---	---		---	---	---	---
1976	-----PPP------	MANUAL	388	JUL 01		3	MAY 16		---	---		---	---	---	---
1977	------PPP-----	MANUAL	178	JUN 03		7	AUG 10		---	---		---	---	---	---
1978	-----PPP-PP---	MANUAL	730	JUN 05		4	SEP 05		---	---		---	---	---	---
1979	-----PPPP-P---	MANUAL	342	AUG 31		2	OCT 03		---	---		---	---	---	---
1980	-----PPPPP----	MANUAL	61	JUN 08		3	SEP 25		---	---		---	---	---	---
1981	-----PP-PP----	MANUAL	107	AUG 25		3	SEP 28		---	---		---	---	---	---
1982	-----P-PPPP---	MANUAL	15	JUL 05		1	OCT 28		---	---		---	---	---	---
1983	---PP-PPP-----	MANUAL	288	MAY 30		0	SEP 27	*	---	---		---	---	---	---
1984	-----P-PP-P---	MANUAL	33	AUG 3		3	JUL 10		---	---		---	---	---	---
1985	---PPPPPPPP--	MANUAL	61	SEP 14		3	APR 29		---	---		---	---	---	---
1986	---PPPPPPPPP-	MANUAL	1 050	MAY 29	*	1	APR 8		---	---		---	---	---	---
1987	---PPPPPPPPP-	MANUAL	458	JUL 22		2	OCT 7		---	---		---	---	---	---
1988	----PPPP-----	MANUAL	36	AUG 29		8	MAY 16		---	---		---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

RED DEER RIVER NEAR BINDLOSS - STATION NO. 05CK004

LOCATION: LAT 52 54 10 N LONG 110 17 50 W
DRAINAGE AREA: 44 700 km²
TYPE OF FLOW: REGULATED SINCE 1968
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 03	12:30	10.0	32.5	42.0		DH59	48	344														
MAY 31	13:30	15.0	31.8	42.0		DH59	52	347														
JUN 28	14:20	23.0	53.0	42.0		DH59	241	242	22	33	54	66	70	75	83	87	100			26	42	33
JUL 26	14:40	22.0	43.9	10RB	X	DIP	78															
AUG 30	15:00	15.0	86.0	42.0		DH59	351	260	14	22	41	56	65	72	80	86	100			28	50	22
NOV 01	14:00		23.8	10RB	X	DIP	104															

NOTE : SINGLE VERTICAL LOCATED AT 43 METRES FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

RED DEER RIVER NEAR BINDLOSS - STATION NO. 05CK004

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)				MINIMUM (mg/L)			SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)			TOTAL FOR PERIOD (TONNES)		SUMMARY : MAR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1966	----CCCCCCCC	MANUAL	11 800	JUL 06	*	35	NOV 03		286 000	JUL 07		1 650 000		---	---	---
1967	CCCCCCCCCCCC	MANUAL	5 000	JUN 04		2	JAN 24		200 000	JUN 04		2 410 000		5 810	5 810	---
1968	CCCCCCCCCCCC	MANUAL	5 480	JUL 25		11	DEC 10		70 300	JUL 28		843 000		3 420	5 820	48.3
1969	CCCCCCCCCCCC	MANUAL	5 840	APR 08		1	MAR 11	*	377 000	APR 08		4 710 000		1e 200	10 800	42.4
1970	CCCCCCCCCCCC	MANUAL	11 200	JUN 18		11	MAR 18		345 000	JUN 18		2 830 000		11 800	11 100	28.3
1971	CCCCCCCCCCCC	MANUAL	7 710	APR 18		14	NOV 16		617 000	APR 18	*	4 610 000		18 800	12 800	23.4
1972	CCCCCCCCCCCC	MANUAL	4 390	JUN 28		8	NOV 27		185 000	JUN 28		1 800 000		8 500	11 800	32.6
1973	CCCCCCCCCCCC	MANUAL	8 470	JUN 18		7	FEB 23		122 000	JUN 19		1 570 000		8 400	10 900	21.4
1974	CCCCCCCCCCCC	MANUAL	6 700	APR 18		6	FEB 18		344 000	APR 18		6 280 000	*	21 800	12 200	19.8
1975	CCCCCCCCCCCC	MANUAL	4 790	APR 24		12	DEC 17		185 000	APR 24		1 140 000		4 850	11 400	20.1
1976	CCCCCCCCCCCC	MANUAL	5 850	AUG 19		4	JAN 28		135 000	AUG 19		867 000		3 510	10 800	20.7
1977	CCCCCCCCCCCC	MANUAL	6 020	SEP 24		7	FEB 07		84 800	SEP 23		555 000		2 370	8 830	21.8
1978	CCCCCCCCCCCC	MANUAL	8 380	SEP 14		11	DEC 13		86 800	APR 02		1 640 000		6 880	8 570	20.4
1979	CCCCCCCCCC--	MANUAL	2 120	AUG 08		10	JAN 02		10 300	AUG 08		305 000		1 240	8 830	21.3
1980	--CCCCCCCC--	MANUAL	8 070	AUG 10		35	MAY 12		88 800	APR 18		1 850 000		7 580	8 830	20.0
1981	--PCCCCCCC-	MANUAL	6 440	MAY 11		21	OCT 27		126 000	AUG 04		1 710 000		---	---	---
1982	---CCCCCCP-	MANUAL	6 080	SEP 28		58	SEP 18		83 800	JUL 08		1 750 000		---	---	---
1983	--PCCCCCC--	MANUAL	3 340	JUL 05		15	OCT 31		42 300	JUL 12		609 000		---	---	---
1984	--PCCCCCC--	MANUAL	5 810	SEP 14		48	JUL 24		18 100	SEP 15		388 000		---	---	---
1985	---PPPPPPP--	MANUAL	2 950	SEP 18		52	JUL 15		---	---		---		---	---	---
1986	--PPPPPPPPP-	MANUAL	3 440	JUL 22		83	APR 15		---	---		---		---	---	---
1987	---P-PPPP-P-	MANUAL	3 350	SEP 8		13	NOV 3		---	---		---		---	---	---
1988	----PPPP--P-	MANUAL	351	AUG 30		48	MAY 3		---	---		---		---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

SAND RIVER NEAR THE MOUTH - STATION NO. 06AB001

LOCATION: LAT 54 28 16 N LONG 111 11 08 W
DRAINAGE AREA: 4 810 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 18	09:50	4.5	7.01	---	DIP	7	158														
JUN 08	13:20	17.0	5.70	10LB	DH48	28	186														
JUL 11	09:20	15.0	33.2	10RB	DH48	85	157														

NOTE : SINGLE VERTICAL LOCATED AT 10LB (ONE QUARTER THE DISTANCE FROM THE LEFT BANK) FOR 1988

SAND RIVER NEAR THE MOUTH - STATION NO. 05AB001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1984	---PPP-P----	MANUAL	180 JUN 7	*	8 AUG 30		---	---	---	---	---	---
1985	---PP-P--P--	MANUAL	90 APR 23		8 OCT 1	*	---	---	---	---	---	---
1986	-----P-P----	MANUAL	82 AUG 6		18 JUN 3		---	---	---	---	---	---
1987	----PP-P----	MANUAL	48 JUN 4		10 AUG 18		---	---	---	---	---	---
1988	----PPP-----	MANUAL	85 JUL 11		7 MAY 18		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

SHEEP RIVER AT BLACK DIAMOND - STATION NO. 05BL014

LOCATION: LAT 50 41 16 N LONG 114 14 34 W
DRAINAGE AREA: 595 km^2
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002 .004 .008 .016 .031 .062 .125 .250 .500 1.00 2.00	PERCENT SAND	SILT	CLAY
MAY 25	14:45	10.0	6.51	1ORB	DH48	19	188				
JUN 22	13:50	12.0	5.62	1ORB	DH48	3	182				
JUL 28	09:45	16.0	1.85	1ORB	DH48	3	230				
AUG 30	09:35		2.94	1ORB	DH48	4	223				
SEP 26	10:25	5.0	3.38	1ORB	DH48	5	230				
OCT 26	10:00	3.0	2.19	1ORB	DH48	4	231				

NOTE : SINGLE VERTICAL LOCATED AT 10LB (ONE QUARTER THE DISTANCE FROM THE LEFT BANK) FOR 1988

SHEEP RIVER AT BLACK DIAMOND - STATION NO. 05BL014

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	------PP-PP-	MANUAL	4 JUL 28		1 OCT 01		---	---	---	---	---	---
1975	---P-PPPPP--	MANUAL	150 JUN 26		1 SEP 29		---	---	---	---	---	---
1976	---PPPPPP---	MANUAL	2 730 AUG 05	*	0 SEP 24	*	---	---	---	---	---	---
1977	---PPPPPP---	MANUAL	80 SEP 26		1 JUL 25		---	---	---	---	---	---
1978	----PP-PP---	MANUAL	727 JUN 08		3 SEP 26		---	---	---	---	---	---
1979	---PPPPPP---	MANUAL	21 MAY 30		0 AUG 20		---	---	---	---	---	---
1980	---PP-PP-P--	MANUAL	1 340 MAY 26		1 OCT 08		---	---	---	---	---	---
1981	--PPPPPPP---	MANUAL	1 410 MAY 26		8 SEP 26		---	---	---	---	---	---
1982	---PPPPPP---	MANUAL	137 MAY 26		2 AUG 23		---	---	---	---	---	---
1983	-----PPPPP---	MANUAL	129 MAY 30		1 AUG 31		---	---	---	---	---	---
1984	----PP-PP---	MANUAL	81 JUN 8		3 SEP 6		---	---	---	---	---	---
1985	----PPPPP---	MANUAL	1 620 SEP 13		11 JUL 17		---	---	---	---	---	---
1986	--PPPPPPP---	MANUAL	385 MAY 22		2 AUG 27		---	---	---	---	---	---
1987	----PPPP-PP-	MANUAL	167 JUL 21		2 OCT 5		---	---	---	---	---	---
1988	----PPPPPP--	MANUAL	18 MAY 25		3 JUL 28		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

SIMONETTE RIVER NEAR GODDWIN - STATION NO. 07EF001

LOCATION: LAT 55 08 30 N LONG 118 10 30 W
DRAINAGE AREA: 6 080 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 13	13:30	5.0	18.9	---	X	DIP	273															
APR 19	10:30	7.5	35.5	MID	X	DH59	771	186	54	59	80	84	86	97	99							
MAY 17	12:30	14.5	17.1	16.0	X	DH59	63	267												3	28	69
JUN 13	16:30	17.0	264	40.0	X	DH59	6230	211	37	34	51	82	81	91	96	98						
JUN 21	11:00	18.0	29.6	38.0	X	DH59	396	215	38	59	72	83	85	89	96	99				9	57	34
AUG 22	14:05	22.0	5.66	44.0	X	DH48	11	322												11	30	59
SEP 27	08:55	8.0	4.07	42.0	X	DH48	26	304														
NOV 02	08:40	1.0	3.13	44.0	X	DH48	41	282														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

* VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

SIMONETTE RIVER NEAR GODDWIN - STATION NO. 07EF001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)				MINIMUM (mg/L)				SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	---------P-P-	MANUAL	17	NOV 07			11	SEP 18			---	---	---	---	---	---
1975	---PPPPPPP--	MANUAL	872	APR 28			4	AUG 18			---	---	---	---	---	---
1976	---PPPP------	MANUAL	4 300	APR 06			24	JUL 28			---	---	---	---	---	---
1977	---PPPP-PP--	MANUAL	3 890	APR 11			18	OCT 26			---	---	---	---	---	---
1978	-----PPPPPP--	MANUAL	1 200	MAY 02			8	AUG 30			---	---	---	---	---	---
1979	---PPPPPPP--	MANUAL	3 780	JUN 18			6	OCT 30			---	---	---	---	---	---
1980	---P-PPPP---	MANUAL	3 480	JUN 07			40	JUL 24			---	---	---	---	---	---
1981	---P--P-PP--	MANUAL	487	APR 26			3	SEP 04	*		---	---	---	---	---	---
1982	----P-PP-P--	MANUAL	2 880	JUL 16			42	OCT 05			---	---	---	---	---	---
1983	---PPPPPP---	MANUAL	7 230	JUL 18	*		37	AUG 30			---	---	---	---	---	---
1984	---P-PPPP---	MANUAL	738	APR 17			8	AUG 28			---	---	---	---	---	---
1985	---PPPPPPP--	MANUAL	503	APR 18			3	JUL 23			---	---	---	---	---	---
1986	---PPPPPPP--	MANUAL	830	MAY 22			7	SEP 24			---	---	---	---	---	---
1987	---P-P-PPP--	MANUAL	3 110	AUG 8			24	OCT 28			---	---	---	---	---	---
1988	---PPP-PP-P-	MANUAL	6 230	JUN 13			11	AUG 22			---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

SLAVE RIVER AT FITZGERALD - STATION NO. 07NB001

SUSPENDED SEDIMENT FOR 1986

LOCATION: LAT 59 52 20 N LONG 111 35 00 W
DRAINAGE AREA: 606 000 km²
TYPE OF FLOW: REGULATED SINCE 1986
TYPE OF GAUGE: RECORDING

TOTAL SUSPENDED SEDIMENT LOAD 20 100 000 TONNES FOR THE PERIOD MAY 17 TO OCT 31

REMARKS:

DAY	MAY DAILY DISCHARGE (m³/s)	MAY MEAN CONCENTRATION (mg/L)	MAY DAILY LOAD (t)	JUN DAILY DISCHARGE (m³/s)	JUN MEAN CONCENTRATION (mg/L)	JUN DAILY LOAD (t)	JUL DAILY DISCHARGE (m³/s)	JUL MEAN CONCENTRATION (mg/L)	JUL DAILY LOAD (t)	DAY
1	3 800 B			4 280	573 S	211 000	4 880	248	101 000	1
2	3 780 B			4 340	484 S	170 000	4 540	197	77 300	2
3	3 610 B			4 480	354 S	138 000	4 470	164	63 300	3
4	3 880 B			4 580	290 S	114 000	4 480	148 S	58 800	4
5	4 010 B			4 670	258 S	102 000	4 880	137 S	54 300	5
6	4 180 B			4 800	226 S	88 800	4 880	118 S	48 800	6
7	4 500 B			4 830	224 S	88 600	5 400	169 S	74 300	7
8	4 470 B			4 680	226 S	88 000	5 270	313 S	143 000	8
9	4 430			4 480	221 S	85 700	5 260	482 S	220 000	9
10	4 380			4 200	220 S	78 800	5 230	639 S	258 000	10
11	4 380			4 250	235 S	88 300	5 200	734 S	330 000	11
12	4 380			4 410	258 S	98 300	5 270	825 S	376 000	12
13	4 400			4 480	246 S	94 800	5 600	880 S	470 000	13
14	4 340			4 780	238 S	97 100	5 680	903 S	443 000	14
15	4 390			5 040	248 S	108 000	5 580	811 S	390 000	15
16	4 100			5 170	284 S	131 000	5 390	782 S	389 000	16
17	3 880	366 S	135 000	5 310	330 S	181 000	5 370	736 S	341 000	17
18	3 890	362 S	135 000	5 480	410	183 000	5 380	663 S	289 000	18
19	4 050	323 S	113 000	5 480	581	266 000	5 490	528 S	250 000	19
20	4 280	336 S	135 000	5 380	817	380 000	5 700	604 S	348 000	20
21	4 440	439 S	168 000	5 410	984 S	446 000	5 880	643 S	328 000	21
22	4 610	423 S	168 000	5 380	900 S	418 000	5 930	695 S	356 000	22
23	4 670	439 S	178 000	5 280	879 S	402 000	5 740	1 020 S	506 000	23
24	5 000	475	205 000	5 190	821	366 000	5 630	1 080 S	525 000	24
25	4 830	513	214 000	5 050	701	308 000	5 710	888 S	437 000	25
26	4 770	558 S	230 000	5 020	587	246 000	5 580	700 S	336 000	26
27	4 880	845 S	281 000	5 020	468 S	202 000	5 390	580 S	276 000	27
28	4 800	824 S	367 000	4 880	390	167 000	5 290	646	249 000	28
29	4 580	1 410 S	558 000	4 880	340	143 000	5 250	611 S	232 000	29
30	4 580	1 250 S	492 000	4 800	287	123 000	5 190	453	203 000	30
31	4 380	818 S	309 000				5 000	373	161 000	31
TOTAL	134 780		3 845 000	148 380		5 594 400	183 880		8 331 800	TOTAL

DAY	AUG DAILY DISCHARGE (m³/s)	AUG MEAN CONCENTRATION (mg/L)	AUG DAILY LOAD (t)	SEP DAILY DISCHARGE (m³/s)	SEP MEAN CONCENTRATION (mg/L)	SEP DAILY LOAD (t)	OCT DAILY DISCHARGE (m³/s)	OCT MEAN CONCENTRATION (mg/L)	OCT DAILY LOAD (t)	DAY
1	4 940	272	116 000	3 740	68 S	22 000	3 470	82 S	24 600	1
2	4 880	183 S	81 500	3 770	78 S	26 400	3 510	84 S	33 600	2
3	4 820	208 S	86 600	3 770	90 S	29 300	3 530	108 S	33 200	3
4	4 810	181 S	75 200	3 610	81 S	26 700	3 440	88 S	26 200	4
5	4 830	188 S	87 200	3 600	87 S	22 000	3 410	88 S	20 300	5
6	4 820	188 S	83 100	3 750	61 S	18 800	3 430	87 S	18 800	6
7	4 530	143 S	56 000	3 680	63 S	20 000	3 470	86 S	25 800	7
8	4 360	134 S	50 500	3 650	89 S	28 100	3 480	83 S	18 800	8
9	4 210	120	43 800	3 530	74 S	22 600	3 390	86 S	16 100	9
10	4 140	120 S	42 900	3 460	84 S	25 100	3 380	83 S	16 800	10
11	4 180	113 S	40 800	3 520	111	33 800	3 410	52 S	15 300	11
12	4 230	111 S	40 600	3 810	127 S	38 500	3 420	85 S	19 200	12
13	4 210	104	37 800	3 420	85 S	28 100	3 410	80 S	17 700	13
14	4 270	100 S	36 900	3 380	68 S	19 700	3 400	46 S	13 600	14
15	4 280	93 S	34 100	3 370	72 S	21 000	3 330	82 S	15 000	15
16	4 320	88 S	32 800	3 390	83 S	24 300	3 330	48 S	13 800	16
17	4 280	78 S	28 200	3 450	68 S	20 800	3 310	46 S	13 200	17
18	4 200	77	27 900	3 480	68	20 400	3 280	80 S	14 200	18
19	4 110	74 S	26 300	3 630	86 S	30 100	3 320	88 S	16 800	19
20	4 040	73 S	25 500	3 690	73 S	22 800	3 480	87	20 000	20
21	3 980	77 S	26 800	3 580	66 S	20 600	3 430	73	21 800	21
22	3 940	82 S	28 200	3 530	62 S	18 800	3 550	78	24 300	22
23	3 850	78 S	26 600	3 670	67 S	20 700	3 510	82	24 800	23
24	3 810	77 S	25 300	3 580	78 S	24 200	3 430	88	26 100	24
25	3 780	75 S	24 500	3 520	66 S	20 100	3 400	80 S	26 400	25
26	3 780	80 S	26 100	3 510	71 S	21 500	3 340	88 E	25 400	26
27	3 810	78	26 700	3 540	77 S	23 600	3 120	86 E	23 200	27
28	3 800	78 S	25 600	3 510	78 S	23 700	2 880	84 E	21 400	28
29	3 780	88 S	22 100	3 510	64 S	18 400	2 850	82 E	20 800	29
30	3 740	86 S	21 300	3 450	88 S	20 300	3 010	80 E	20 600	30
31	3 700	88 S	22 100				3 040	78 E	20 800	31
TOTAL	130 180		1 287 300	108 800		700 000	103 850		640 500	TOTAL

B - ICE CONDITIONS E - ESTIMATED S - SAMPLE(S) COLLECTED THIS DAY

ALBERTA

SLAVE RIVER AT FITZGERALD - STATION NO. 07HB001

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)		SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 17	08:35		3980	H	WELB	PUMP	366															
MAY 17	07:05		3960		WELB	D49	383	182	28	49	66	85	89	93	95	99	100			7	44	49
MAY 17	07:25		3960	H	WELB	DIP	370															
MAY 17	07:30		3960	H	WELB	PUMP	364															
MAY 18	06:00		3890	H	WELB	PUMP	366															
MAY 19	03:00		4050	H	WELB	PUMP	346															
MAY 20	04:00		4280	H	WELB	PUMP	283															
MAY 21	01:30		4440	H	WELB	PUMP	432															
MAY 22	02:00		4810	H	WELB	PUMP	426															
MAY 23	01:15		4870	H	WELB	PUMP	435															
MAY 26	08:45		4770	H	WELB	PUMP	953															
MAY 27	01:45		4680	H	WELB	PUMP	588	140														
MAY 28	02:30		4800	H	WELB	PUMP	744															
MAY 29	02:00		4580	H	WELB	PUMP	1320															
MAY 30	01:30		4580	H	WELB	PUMP	1460															
MAY 31	01:30		4360	H	WELB	PUMP	945															
JUN 01	08:00		4280	H	WELB	PUMP	819															
JUN 02	01:30		4340	H	WELB	PUMP	495															
JUN 03	01:00		4480	H	WELB	PUMP	397															
JUN 04	05:45		4580	H	WELB	PUMP	297															
JUN 05	02:30		4570	H	WELB	PUMP	273															
JUN 06	01:30		4600	H	WELB	PUMP	232															
JUN 07	01:00		4830	H	WELB	PUMP	225	134														
JUN 08	01:20		4580	H	WELB	PUMP	228															
JUN 09	01:15		4480	H	WELB	PUMP	226															
JUN 10	02:00		4200	H	WELB	PUMP	216															
JUN 11	02:30		4280	H	WELB	PUMP	223															
JUN 12	02:00		4410	H	WELB	PUMP	253															
JUN 13	01:30		4480	H	WELB	PUMP	252															
JUN 13	08:15		4480	H	WELB	PUMP	243															
JUN 14	01:30		4760	H	WELB	PUMP	242															
JUN 15	01:30		5040	H	WELB	PUMP	226	142														
JUN 16	02:00		5170	H	WELB	PUMP	262															
JUN 17	03:00		5310	H	WELB	PUMP	305															
JUN 21	08:00		5410	H	WELB	PUMP	975															
JUN 22	01:05		5380	H	WELB	PUMP	917	176														
JUN 22	14:00		5390	H	WELB	PUMP	885															
JUN 23	02:00		5280	H	WELB	D49	887															
JUN 27	01:30		5020	H	WELB	PUMP	500															
JUL 04	08:45		4450	H	WELB	D49	148	138														
JUL 05	09:20		4590	H	WELB	PUMP	141															
JUL 06	02:30		4880	H	WELB	PUMP	118															
JUL 06	05:30		4880	H	WELB	PUMP	140															
JUL 07	02:00		5400	H	WELB	PUMP	110															
JUL 08	02:30		5270	H	WELB	PUMP	286															
JUL 08	08:30		5270	H	WELB	PUMP	289															
JUL 08	08:00		5270	H	WELB	PUMP	286															
JUL 09	06:00		5280	H	WELB	PUMP	700															
JUL 10	03:00		5220	H	WELB	PUMP	580															
JUL 10	08:50		5220		WELB	DH48	639	188	34	48	67	80	92	95	97	100				5	48	48
JUL 11	01:00		5200	H	WELB	PUMP	683															
JUL 11	06:30		5200	H	WELB	PUMP	787															
JUL 12	02:00		5270	H	WELB	PUMP	709															
JUL 12	08:30		5270	H	WELB	PUMP	798															
JUL 12	12:30		5270	H	WELB	PUMP	848															
JUL 13	02:30		5500	H	WELB	PUMP	933															
JUL 13	08:00		5500	H	WELB	PUMP	1000															
JUL 14	02:30		5880	H	WELB	PUMP	855															
JUL 14	09:00		5880	H	WELB	PUMP	913															
JUL 15	02:30		5580	H	WELB	PUMP	831															
JUL 16	07:00		5580	H	WELB	PUMP	813															
JUL 16	02:30		5390	H	WELB	PUMP	786															
JUL 16	08:30		5390	H	WELB	PUMP	788															
JUL 16	01:00		5390	H	WELB	PUMP	883															
JUL 16	10:00		5380	H	WELB	PUMP	580															
JUL 16	02:30		5480	H	WELB	PUMP	518															
JUL 16	05:00		5480		WELB	DH48	584	170	34	48	61	77	88	90	94	99	100			10	42	48
JUL 16	05:10		5480	H	WELB	PUMP	520															
JUL 16	05:15		5480	H	WELB	PUMP	530															
JUL 16	07:30		5480	H	WELB	PUMP	517															
JUL 16	13:00		5490	H	WELB	PUMP	511															
JUL 20	08:00		5700	H	WELB	PUMP	486															
JUL 20	21:00		5700	H	WELB	PUMP	494															
JUL 21	13:00		5860	H	WELB	PUMP	686															
JUL 22	02:00		5930	H	WELB	PUMP	686															
JUL 23	08:00		5740	H	WELB	PUMP	687															
JUL 23	08:00		5740	H	WELB	PUMP	983															
JUL 24	03:00		5830	H	WELB	PUMP	1150															
JUL 25	02:30		5710	H	WELB	PUMP	972															
JUL 26	02:00		5580	H	WELB	PUMP	765	186														
JUL 27	01:30		5380	H	WELB	PUMP	639															
JUL 27	08:00		5380	H	WELB	PUMP	589															
JUL 28	01:30		5250	H	WELB	PUMP	521															
AUG 02	02:00		4890	H	WELB	PUMP	207															
AUG 03	04:00		4820	H	WELB	PUMP	205	132														
AUG 04	08:00		4810	H	WELB	PUMP	171															
AUG 04	08:30		4810	H	WELB	PUMP	193															
AUG 05	01:30		4830	H	WELB	PUMP	188															
AUG 05	07:00		4830	H	WELB	PUMP	170															
AUG 06	02:30		4820	H	WELB	PUMP	175															
AUG 06	09:00		4820	H	WELB	PUMP	186															
AUG 07	01:00		4830	H	WELB	PUMP	128															
AUG 07	08:00		4530	H	WELB	PUMP	142															
AUG 08	01:30		4380	H	WELB	PUMP	144															
AUG 08	08:00		4380	H	WELB	PUMP	134															
AUG 10	02:00		4140	H	WELB	PUMP	118	128														
AUG 10	05:00		4140	H	WELB	PUMP	120															
AUG 11	02:00		4180	H	WELB	PUMP	126															
AUG 11	08:00		4180	H	WELB	PUMP	118															
AUG 12	02:00		4230	H	WELB	PUMP	108															
AUG 12	07:00		4230	H	WELB	PUMP	118															

NOTE : SINGLE VERTICAL LOCATED AT WELB (WATER'S EDGE LEFT BANK) FOR 1988

DISCHARGE SYMBOL(S): H - DAILY MEAN

CONTINUED

SLAVE RIVER AT FITZGERALD - STATION NO. 07NB001(CONTINUED)

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1986

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)		SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
AUG 14	01:00		4270	H	WELB	PUMP	86															
AUG 14	05:00		4270	H	WELB	PUMP	104															
AUG 16	05:00		4280	H	WELB	PUMP	83															
AUG 16	01:30		4320	H	WELB	PUMP	80															
AUG 16	05:30		4320	H	WELB	PUMP	83															
AUG 17	01:00		4280	H	WELB	PUMP	81	117														
AUG 17	13:00		4280	H	WELB	PUMP	80															
AUG 18	01:30		4110	H	WELB	PUMP	77															
AUG 20	01:15		4040	H	WELB	PUMP	72															
AUG 20	08:30		4040	H	WELB	PUMP	71															
AUG 21	01:30		3990	H	WELB	PUMP	76															
AUG 21	09:00		3990	H	WELB	PUMP	77															
AUG 22	01:30		3980	H	WELB	PUMP	76															
AUG 23	01:15		3950	H	WELB	PUMP	89															
AUG 23	08:30		3950	H	WELB	PUMP	76															
AUG 24	00:30		3810	H	WELB	PUMP	89															
AUG 25	00:30		3780	H	WELB	PUMP	89	174														
AUG 25	08:00		3780	H	WELB	PUMP	76															
AUG 26	01:00		3780	H	WELB	PUMP	76															
AUG 26	05:30		3780	H	WELB	PUMP	82															
AUG 28	01:00		3800	H	WELB	PUMP	77															
AUG 29	00:30		3780	H	WELB	PUMP	80															
AUG 29	05:30		3780	H	WELB	PUMP	87															
AUG 30	01:00		3740	H	WELB	PUMP	89															
AUG 30	05:30		3740	H	WELB	PUMP	84															
AUG 31	01:00		3700	H	WELB	PUMP	84															
AUG 31	05:30		3700	H	WELB	PUMP	86															
SEP 01	00:30		3740	H	WELB	PUMP	76															
SEP 02	01:00		3770	H	WELB	PUMP	88	112														
SEP 02	04:00		3770	H	WELB	PUMP	86															
SEP 03	01:00		3770	H	WELB	PUMP	97															
SEP 03	08:00		3770	H	WELB	PUMP	90															
SEP 04	01:00		3810	H	WELB	PUMP	90															
SEP 05	05:30		3800	H	WELB	PUMP	88															
SEP 06	01:00		3750	H	WELB	PUMP	87															
SEP 06	07:30		3750	H	WELB	PUMP	82															
SEP 07	00:00		3880	H	WELB	PUMP	80															
SEP 08	01:00		3850	H	WELB	PUMP	71															
SEP 08	05:00		3850	H	WELB	PUMP	84															
SEP 09	00:30		3830	H	WELB	PUMP	72	130														
SEP 09	05:00		3830	H	WELB	PUMP	78															
SEP 10	02:00		3480	H	WELB	PUMP	78															
SEP 12	01:00		3510	H	WELB	PUMP	131															
SEP 12	08:30		3510	H	WELB	PUMP	134															
SEP 13	01:00		3420	H	WELB	PUMP	117															
SEP 13	07:30		3420	H	WELB	PUMP	101															
SEP 14	00:30		3380	H	WELB	PUMP	71															
SEP 14	07:00		3380	H	WELB	PUMP	70															
SEP 15	01:00		3370	H	WELB	PUMP	84															
SEP 15	08:30		3370	H	WELB	PUMP	85															
SEP 16	00:00		3380	H	WELB	PUMP	88															
SEP 16	05:00		3380	H	WELB	PUMP	89															
SEP 17	01:30		3450	H	WELB	PUMP	73															
SEP 17	08:00		3450	H	WELB	PUMP	88															
SEP 18	00:30		3530	H	WELB	PUMP	87															
SEP 18	07:00		3530	H	WELB	PUMP	82															
SEP 20	00:30		3590	H	WELB	PUMP	73															
SEP 20	08:00		3590	H	WELB	PUMP	75															
SEP 21	00:30		3590	H	WELB	PUMP	73															
SEP 21	07:00		3590	H	WELB	PUMP	86															
SEP 22	01:00		3630	H	WELB	PUMP	86															
SEP 22	07:00		3630	H	WELB	PUMP	83															
SEP 23	00:00		3570	H	WELB	PUMP	84															
SEP 23	05:30		3570	H	WELB	PUMP	86															
SEP 24	01:10		3580	H	WELB	PUMP	76															
SEP 24	08:00		3580	H	WELB	PUMP	82															
SEP 25	01:00		3520	H	WELB	PUMP	88															
SEP 25	05:30		3520	H	WELB	PUMP	87															
SEP 26	00:30		3510	H	WELB	PUMP	88															
SEP 27	00:00		3540	H	WELB	PUMP	78															
SEP 27	07:00		3540	H	WELB	PUMP	76															
SEP 28	00:30		3510	H	WELB	PUMP	84															
SEP 28	05:30		3510	H	WELB	PUMP	83															
SEP 29	00:00		3510	H	WELB	PUMP	59															
SEP 29	05:00		3510	H	WELB	PUMP	52															
SEP 30	00:30		3450	H	WELB	PUMP	60															
SEP 30	04:30		3450	H	WELB	PUMP	61															
OCT 01	01:00		3470	H	WELB	PUMP	63															
OCT 01	08:30		3470	H	WELB	PUMP	69															
OCT 02	04:00		3510	H	WELB	PUMP	71															
OCT 02	08:30		3510	H	WELB	PUMP	70															
OCT 03	00:00		3530	H	WELB	PUMP	110															
OCT 03	07:00		3530	H	WELB	PUMP	116															
OCT 04	00:30		3440	H	WELB	PUMP	102															
OCT 05	01:00		3410	H	WELB	PUMP	72															
OCT 05	04:15		3410	H	WELB	PUMP	73															
OCT 06	05:00		3430	H	WELB	PUMP	84															
OCT 07	01:00		3470	H	WELB	PUMP	83	125														
OCT 07	01:30		3470	H	WELB	PUMP	76															
OCT 07	05:00		3470	H	WELB	PUMP	81															
OCT 08	00:30		3480	H	WELB	PUMP	71															
OCT 08	01:00		3390	H	WELB	PUMP	58															
OCT 08	05:30		3390	H	WELB	PUMP	57															
OCT 10	02:00		3380	H	WELB	PUMP	55															
OCT 10	04:15		3380	H	WELB	PUMP	54															
OCT 11	00:30		3410	H	WELB	PUMP	61															
OCT 11	05:00		3410	H	WELB	PUMP	60															
OCT 12	00:30		3420	H	WELB	PUMP	58															
OCT 12	05:00		3420	H	WELB	PUMP	60															

NOTE : SINGLE VERTICAL LOCATED AT WELB (WATER'S EDGE LEFT BANK) FOR 1986

DISCHARGE SYMBOL(S): H - DAILY MEAN

CONTINUED

ALBERTA

SLAVE RIVER AT FITZGERALD - STATION NO. 07NB001(CONTINUED)

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)		SINGLE SAMPLING VERTICAL SAMPLED (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002 .004 .008 .016 .031 .063 .125 .250 .500 1.00 2.00	PERCENT SAND SILT CLAY
OCT 13	00:30		3410	H	WELS	PUMP	72			
OCT 13	02:15		3410	H	WELS	PUMP	70	146		
OCT 13	06:30		3410		66.0	DH48	80 T	141		
OCT 13	06:35		3410		66.0	DH48	85 B	141		
OCT 13	06:40		3410		180	DH48	83 T	140		
OCT 13	06:41		3410		180	DH48	85 B	135		
OCT 13	06:45		3410		210	DH48	86 T	136		
OCT 13	06:46		3410		210	DH48	88 B	137		
OCT 13	06:50		3410		270	DH48	70 T	134		
OCT 13	06:51		3410		270	DH48	71 B	130		
OCT 13	06:55		3410		300	DH48	67 T	134		
OCT 13	06:56		3410		300	DH48	76 B	135		
OCT 13	09:30		3410	H	WELS	PUMP	85	138		
OCT 14	00:00		3400	H	WELS	PUMP	84			
OCT 15	04:00		3330	H	WELS	PUMP	61			
OCT 16	04:30		3330	H	WELS	PUMP	52			
OCT 17	00:30		3310	H	WELS	PUMP	41			
OCT 18	00:30		3280	H	WELS	PUMP	48			
OCT 19	07:00		3320	H	WELS	PUMP	54			
OCT 28	04:50		3400	H	WELS	PUMP	90	95		

NOTE : SINGLE VERTICAL LOCATED AT WELS (WATER'S EDGE LEFT BANK) FOR 1988

DISCHARGE SYMBOL(S): H - DAILY MEAN

SLAVE RIVER AT FITZGERALD - STATION NO. 07NB001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)				MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MAY-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1971	·····P·EEE··	MANUAL	388	AUG 04		106	OCT 31		182 000	AUG 01	5 280 000	---	---	---
1972	·····EEEE···	MANUAL	7 810	JUN 22	*	131	SEP 15		4 840 000	JUN 22	* 44 800 000	* ---	---	---
1973	····PEEEEP··	MANUAL	1 010	JUN 24		55	OCT 03		554 000	JUN 24	20 700 000	---	---	---
1974	·····EEEEE··	MANUAL	881	JUL 29		85	SEP 26		544 000	JUL 26	21 200 000	---	---	---
1975	····PEEEEE··	MANUAL	558	MAY 16		95	OCT 22		238 000	MAY 16	12 300 000	---	---	---
1976	····EEEEP···	MANUAL	3 080	JUL 05		56	AUG 05		1 840 000	JUL 05	29 300 000	---	---	---
1977	····EEEEEP··	MANUAL	730	MAY 20		28	SEP 27		384 000	MAY 19	14 600 000	---	---	---
1978	····EEEEE···	MANUAL	1 540	JUN 15		53	AUG 28		767 000	JUN 15	19 800 000	---	---	---
1979	····PEEEEE··	DUAL	1 210	JUN 09		46	OCT 23		881 000	JUN 09	23 100 000	---	---	---
1980	····EEEEEE··	AUTO	2 030	JUN 17		49	SEP 04		783 000	JUN 17	13 300 000	87 100	87 100	---
1981	····PEEEEE··	AUTO	600	JUN 10		28	AUG 27		387 000	JUN 10	7 480 000	---	---	---
1982	·····EEEEE··	AUTO	5 270	JUL 25		48	OCT 08		3 550 000	JUL 25	24 900 000	---	---	---
1983	····PEEEEP··	DUAL	1 880	JUL 02		52	SEP 14		796 000	JUL 26	25 200 000	---	---	---
1984	····EEEEEE··	DUAL	2 420	JUN 1		80	SEP 14		1 090 000	JUN 01	38 700 000	158 000	113 000	38.7
1985	····PEEEEE·P	DUAL	833	MAY 19		14	AUG 30	*	448 000	DEC 01	10 400 000	---	---	---
1986	····PEEPEE··	DUAL	1 270	JUN 8		57	SEP 20		534 000	JUN 09	13 600 000	---	---	---
1987	····PEEEEP··	DUAL	5 650	AUG 11		75	SEP 28		3 550 000	AUG 11	32 950 000	---	---	---
1988	····PEEEEE··	DUAL	1 480	MAY 30		41	OCT 17		558 000	MAY 28	30 100 000	---	---	---

AUTO - AUTOMATIC SAMPLING DUAL - MANUAL AND AUTOMATIC SAMPLING MANUAL - MANUAL SAMPLING

E - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

SOUTH SASKATCHEWAN RIVER AT HIGHWAY NO. 41 - STATION NO. 05AK001

LOCATION: LAT 50 44 18 N LONG 110 05 45 W
DRAINAGE AREA: 58 000 km²
TYPE OF FLOW: REGULATED
TYPE OF GAUGE: MANUAL

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL SAMPLED (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 18	12:45	10.0	37.0	160	DAS	10	356														
MAY 31	09:40	18.0	71.1	160	DAS	22	261														
JUN 18	10:20	16.0	278	160	DAS	233	216														
JUN 28	10:20	22.0	160	160	DAS	30	170														
JUL 26	10:00	22.0	37.2	160	DIP	10															
AUG 30	10:00	17.0	44.0	160	DIP	23															
SEP 27	09:25	9.0	30.6	160	DIP	10															
NOV 01	10:00	5.0	118	160	DIP	65															

NOTE : SINGLE VERTICAL LOCATED AT 160 METRES FOR 1988

SOUTH SASKATCHEWAN RIVER AT HIGHWAY NO. 41 - STATION NO. 05AK001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : APR-OCT MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1985	---PCCCCCCCC	MANUAL	1 830	JUN 06	6	SEP 19	185 000	JUN 06	2 430 000	---	---	---
1987	CCCCCCCCCCCC	MANUAL	2 880	MAY 11	6	SEP 06	564 000	JUN 03	7 480 000 *	34 700	34 700	---
1988	CCCCCCCCCCCC	MANUAL	2 020	JUN 08	3	AUG 11	107 000	JUN 08	1 180 000	5 330	20 000	73.4
1989	CCCCCCCCCCCC	MANUAL	3 290	JUN 30	4	SEP 23	452 000	JUL 02	4 550 000	20 500	20 200	42.0
1970	CCCCCCCCCCCC	MANUAL	3 740	JUN 17	2	SEP 08 *	417 000	JUN 17	2 700 000	12 500	18 300	34.4
1971	CCCCCCCCCCCC	MANUAL	1 640	JUN 10	2	SEP 05	170 000	JUN 10	2 350 000	10 600	16 800	30.4
1972	CCCCCCCCCCCC	MANUAL	4 150	MAR 18	3	JAN 27	261 000	JUN 04	4 720 000	19 500	17 200	24.4
1973	CCCCCCCCCCCC	MANUAL	1 450	JUN 17	2	JAN 10	46 100	JUN 17	720 000	3 270	15 200	26.7
1974	CCCCCCCCCCCC	MANUAL	5 290	MAY 06	2	OCT 19	350 000	MAY 04	4 050 000	19 000	15 700	22.6
1976	CCCCCCCCCCCC	MANUAL	6 190	JUN 23 *	2	JAN 07	1 550 000	JUN 23 *	7 450 000	34 700	17 800	21.2
1976	CCCCCCCCCCCC	MANUAL	1 310	MAY 15	2	SEP 25	70 000	AUG 10	1 300 000	5 850	16 800	21.8
1977	CCCCCCCCCCCC	MANUAL	1 300	JUN 15	3	APR 29	29 800	JUN 15	120 000	498	15 100	23.8
1978	CCCCCCCCCCCC	MANUAL	1 970	JUN 03	6	AUG 13	86 700	JUN 10	2 450 000	10 400	14 800	22.1
1979	---CCCCCCC--	MANUAL	1 720	MAY 30	2	SEP 01	102 000	MAY 30	1 160 000	5 400	14 000	22.1
1980	---CCCCCCC--	MANUAL	4 130	MAY 30	7	SEP 02	386 000	MAY 30	2 150 000	10 100	13 800	20.8
1981	--PCCCCCCP-	MANUAL	4 430	MAY 19	11	SEP 22	579 000	MAY 25	4 590 000	21 400	14 300	19.1
1982	---CCCCCCC--	MANUAL	2 000	JUL 06	6	SEP 12	83 500	JUL 06	1 550 000	7 410	13 800	18.7
1983	--PCCCCCC--	MANUAL	3 720	JUL 21	4	SEP 25	43 900	JUL 21	418 000	1 940	13 100	19.3
1984	---CCCCCCC--	MANUAL	637	JUN 28	5	MAY 8	9 160	JUN 28	118 000	553	12 400	20.0
1985	----PPPPPP--	MANUAL	457	SEP 17	6	SEP 9	---	---	---	---	---	---
1986	---PPPPPPP--	MANUAL	588	MAY 26	15	AUG 18	---	---	---	---	---	---
1987	---PPPPPP-P-	MANUAL	248	MAY 20	9	SEP 29	---	---	---	---	---	---
1988	---PPPPPP-P-	MANUAL	333	JUN 19	10	APR 19	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

ALBERTA

SOUTH SASKATCHEWAN RIVER AT MEDICINE HAT - STATION NO. 05AJ001

LOCATION: LAT 50 02 35 N LONG 110 40 40 W
DRAINAGE AREA: 58 400 km²
TYPE OF FLOW: REGULATED
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 30	10:40	1.0	74.2	110	DH59	24	282														
APR 26	10:45	11.0	45.8	110	DH59	11	281														
MAY 03	10:40	11.0	31.3	110	DH59	8	278														
JUN 01	15:00	12.0	77.8	110	DH59	19	214														
JUN 14	14:30	18.0	282	110	DH59	84	198														
JUN 29	14:30	18.0	70.0	110	DH59	97	211														
JUL 27	15:30	23.0	35.8	110	DH59	7	281														
AUG 31	15:10	19.0	24.3	110	DH59	23	214														
SEP 28	15:05	9.0	31.1	110	DH59	8	282														
NOV 02	14:45	4.0	104	110	DH59	43	226														

NOTE : SINGLE VERTICAL LOCATED AT 110 METRES FOR 1988

SOUTH SASKATCHEWAN RIVER AT MEDICINE HAT - STATION NO. 05AJ001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	------PPPP--	MANUAL	88	JUL 15	9	SEP 11	---	---	---	---	---	---
1975	----PP-PPP--	MANUAL	2 930	JUN 23	6	SEP 15	---	---	---	---	---	---
1976	--PPPPPPPP--	MANUAL	493	MAY 11	1	MAY 05 *	---	---	---	---	---	---
1977	--P-PPPPPP--	MANUAL	53	MAY 24	11	JUN 28	---	---	---	---	---	---
1978	--PPP-PP---P	MANUAL	845	MAR 30	11	DEC 12	---	---	---	---	---	---
1979	----P-P-PP--	MANUAL	808	MAY 31	4	JUL 31	---	---	---	---	---	---
1980	---PPP-P-P--	MANUAL	3 030	MAY 29 *	24	AUG 29	---	---	---	---	---	---
1981	--P-P--PP---	MANUAL	1 780	MAY 26	17	SEP 26	---	---	---	---	---	---
1982	------PP-PP--	MANUAL	346	JUN 23	42	OCT 27	---	---	---	---	---	---
1983	--PP-PPPP-P-	MANUAL	387	JUN 02	8	SEP 26	---	---	---	---	---	---
1984	---PPPP-PP--	MANUAL	113	SEP 10	4	MAY 15	---	---	---	---	---	---
1985	--PPPPPPPP--	MANUAL	869	MAY 29	11	JUL 31	---	---	---	---	---	---
1986	-PPPPPP-P-P-	MANUAL	2 800	FEB 28	8	SEP 3	---	---	---	---	---	---
1987	---PPPPP-----	MANUAL	193	JUL 28	17	JUN 30	---	---	---	---	---	---
1988	--PPPPPPP-P-	MANUAL	87	JUN 29	7	JUL 27	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

STEEPBANK RIVER NEAR FORT MCMURRAY - STATION NO. 07DA005

LOCATION: LAT 57 00 14 N LONG 111 24 53 W
DRAINAGE AREA: 1 320 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAY 06	13:35	5.0	17.2	MID	X	DH59	134	131														
JUN 28	13:50	14.0	8.95	10RB		DH48	69	152														
SEP 10	15:35	10.0	14.2	10RB		DH48	75	148														

NOTE : SINGLE VERTICAL LOCATED AT 10RB (ONE QUARTER THE DISTANCE FROM THE RIGHT BANK) FOR 1988

VERTICAL SYMBOL(S): X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

STEEPBANK RIVER NEAR FORT MCMURRAY - STATION NO. 07DA005

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	SUMMARY : HISTORICAL MEAN LOAD (TONNES)	SUMMARY : STANDARD ERROR OF MEAN %
1975	-----PP-PP--	MANUAL	761	JUL 19	24	JUN 24	---	---	---	---	---	---
1976	---PP-PPP-P-	MANUAL	708	APR 15	8	NOV 05	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	431	APR 18	3	SEP 23	---	---	---	---	---	---
1978	---PPPPPP---	MANUAL	251	MAY 01	4	JUL 24	---	---	---	---	---	---
1979	----PPPPPP--	MANUAL	118	MAY 30	6	AUG 23	---	---	---	---	---	---
1980	---PPPPPPP--	MANUAL	138	SEP 15	6	JUN 27	---	---	---	---	---	---
1981	----P-PP----	MANUAL	50	JUL 15	3	AUG 28	---	---	---	---	---	---
1982	----PP-PP---	MANUAL	120	MAY 15	3	JUN 25	---	---	---	---	---	---
1983	-----P-PP---	MANUAL	11	JUN 22	3	AUG 07	---	---	---	---	---	---
1984	----P--PP---	MANUAL	78	AUG 11	2	SEP 21 *	---	---	---	---	---	---
1985	---P P-P----	MANUAL	672	APR 30 *	3	AUG 20	---	---	---	---	---	---
1986	----PP-P----	MANUAL	189	MAY 8	4	AUG 25	---	---	---	---	---	---
1987	----PP-P----	MANUAL	283	MAY 3	4	AUG 25	---	---	---	---	---	---
1988	----PP--P---	MANUAL	134	MAY 8	88	JUN 29	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

ALBERTA

SWAN RIVER NEAR KINUSO - STATION NO. 07BJ001

SUSPENDED SEDIMENT FOR 1986

LOCATION: LAT 55 19 50 N LONG 115 24 30 W
DRAINAGE AREA: 1 900 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

TOTAL SUSPENDED SEDIMENT LOAD 531 000 TONNES FOR THE PERIOD APR 01 TO OCT 31

REMARKS:

DAY	APR DAILY DISCHARGE (m³/s)	APR MEAN CONCENTRATION (mg/L)	APR DAILY LOAD (t)	MAY DAILY DISCHARGE (m³/s)	MAY MEAN CONCENTRATION (mg/L)	MAY DAILY LOAD (t)	JUN DAILY DISCHARGE (m³/s)	JUN MEAN CONCENTRATION (mg/L)	JUN DAILY LOAD (t)	DAY
1	2.40 B	18	4.70	27.0	303 S	707	21.5	248 S	459	1
2	3.72 B	16	5.14	21.5	173 S	323	18.2	169 S	280	2
3	5.19 B	33	14.6	17.5	120 S	185	20.2	148 S	280	3
4	5.75 B	36	17.8	15.9	129 S	177	15.0	118 S	152	4
5	5.81 B	53 S	27.1	14.7	95 S	121	13.3	91 S	105	5
6	6.84 B	74 S	43.7	14.2	61 S	69.4	12.4	80 S	85.7	6
7	7.78 B	89 S	59.7	13.7	66 S	78.1	12.2	73 S	76.9	7
8	8.00	76 S	52.5	13.1	74 S	83.8	11.8	82 S	82.1	8
9	7.95	76 S	52.2	13.2	71 S	81.0	90.2	1 610 S	12 500	9
10	8.51	70 S	51.5	14.4	87 S	108	215 A	2 820 S	52 400	10
11	10.7	114 S	105	14.7	103 S	131	118	1 850 S	18 500	11
12	11.8	150 S	154	13.8	90 S	107	124	1 330 S	14 200	12
13	13.8	217 S	258	13.2	71 S	81.0	83.6	763 S	5 690	13
14	16.0	240 S	332	22.4	495 S	958	55.9	557 S	2 740	14
15	24.0	502 S	1 040	88.8	2 240 S	17 100	40.3	370 S	1 290	15
16	41.8	1 000 S	3 580	52.7	607	3 870	30.2	226 S	595	16
17	42.3	802 S	2 920	35.1	379 S	1 150	24.5	168 S	357	17
18	34.4	477 S	1 420	27.0	381 S	888	28.0	239 S	579	18
19	33.0	470 S	1 340	21.2	172 S	315	30.1	255 S	651	19
20	42.3	1 150 S	4 200	17.5	100 S	151	21.6	140 S	261	20
21	40.8	712 S	2 520	15.0	63 S	81.6	17.4	91 S	137	21
22	36.8	631 S	2 100	13.2	41 S	46.8	14.7	87 S	95.1	22
23	35.7	450 S	1 390	11.8	42 S	42.8	13.3	55 S	63.2	23
24	34.1	465 S	1 420	13.4	48 S	56.7	13.6	63 S	74.0	24
25	28.7	458 S	1 140	12.2	62 S	70.7	14.7	102 S	130	25
26	24.6	312 S	665	11.3	73	71.3	12.3 A	54 S	57.4	26
27	23.1	238 S	477	10.2	38 S	33.5	11.6 A	55	55.1	27
28	26.2	302 S	856	8.40	22 S	16.0	13.7 A	94 S	111	28
29	28.8	526 S	1 350	8.75	25	19.0	14.6	105 S	132	29
30	31.8	503 S	1 370	14.3	188	232	19.4	150 S	258	30
31				29.1	576 S	1 450				31
TOTAL	845.02		28 799.24	622.57		28 384.7	1 133.5		110 548.5	TOTAL

DAY	JUL DAILY DISCHARGE (m³/s)	JUL MEAN CONCENTRATION (mg/L)	JUL DAILY LOAD (t)	AUG DAILY DISCHARGE (m³/s)	AUG MEAN CONCENTRATION (mg/L)	AUG DAILY LOAD (t)	SEP DAILY DISCHARGE (m³/s)	SEP MEAN CONCENTRATION (mg/L)	SEP DAILY LOAD (t)	DAY
1	24.4	321 S	677	6.71	18	10.4	3.61	16	5.48	1
2	17.5	260 S	431	6.14	18	9.56	3.13	12 S	3.26	2
3	14.3	165 S	204	5.93	18 S	9.22	2.83	12	2.93	3
4	17.9	135 S	209	5.66	18	8.60	2.86	11	2.40	4
5	16.6	111 S	152	5.44	24	11.3	2.38	11 S	2.28	5
6	124	891	9 550	5.08	22 S	9.62	2.23	10	1.93	6
7	580	3 250	163 000	5.21	20	9.00	2.23	10	1.92	7
8	378	2 920 S	95 400	6.03	24	12.5	2.42	14 S	2.93	8
9	164 A	2 230 S	29 700	5.79	20 S	10.0	3.09	31	8.20	9
10	85.9	1 340	10 100	5.05	19	8.28	3.12	35	9.43	10
11	61.5	578 S	3 600	4.62	20	7.98	3.24	37 S	10.4	11
12	55.4	567 S	2 710	4.58	25 S	9.91	3.15	32	8.62	12
13	167	2 000 S	28 800	4.83	32	13.3	2.90	19	4.78	13
14	104	1 080 S	9 700	4.59	31	12.3	2.93	16 S	3.27	14
15	62.7	648 S	3 510	4.20	20 S	7.28	2.48	10	2.12	15
16	43.2	420 S	1 570	3.83	15	5.05	2.36	10	2.06	16
17	31.9	285 S	788	4.59	20	8.40	2.43	10	2.10	17
18	26.2	157 S	423	7.47	32 S	20.7	2.66	12	2.79	18
19	23.4	143 S	289	6.89	45	24.8	2.88	13	3.25	19
20	21.1	131 S	239	9.66	69	58.5	2.85	12	2.95	20
21	18.1	105 S	164	10.1	85 S	74.2	2.73	10 S	2.36	21
22	15.5	94 S	126	11.0	66	63.9	2.61	16	3.43	22
23	13.5	74 S	89.2	13.1	168	186	3.39	15	4.39	23
24	12.1	53 S	55.4	9.45	135 S	110	4.30	24	8.92	24
25	10.8	45 S	46.1	7.26	65	40.8	3.64	18	5.97	25
26	9.81	43 S	36.4	6.97	21 S	16.0	3.53	13	3.95	26
27	8.77	33 S	25.0	5.12	26 S	12.4	3.35	11	3.16	27
28	7.90	30 S	20.5	4.50	28	10.9	3.32	12 S	3.44	28
29	7.52	25 S	18.9	4.05	29	10.1	3.58	21 S	5.80	29
30	7.51	37 S	24.0	3.72	30 S	9.64	3.71	21	6.73	30
31	7.34	28 S	17.8	3.59	26	8.08				31
TOTAL	2 128.45		381 788.4	192.71		840.72	89.86		130.13	TOTAL

A - MANUAL GAUGE B - ICE CONDITIONS S - SAMPLE(S) COLLECTED THIS DAY

SWAN RIVER NEAR KINUSO - STATION NO. 07BJ001

SUSPENDED SEDIMENT FOR 1988

DAY	OCT DAILY DISCHARGE (m^3/s)	OCT MEAN CONCENTRATION (mg/L)	OCT DAILY LOAD (t)	NOV DAILY DISCHARGE (m^3/s)	NOV MEAN CONCENTRATION (mg/L)	NOV DAILY LOAD (t)	DEC DAILY DISCHARGE (m^3/s)	DEC MEAN CONCENTRATION (mg/L)	DEC DAILY LOAD (t)	DAY
1	3.45	21	6.26							1
2	3.13	20	5.41							2
3	2.88	18	4.48							3
4	2.88	14	3.24							4
5	2.87	12 S	2.88							5
6	2.81	12	2.80							6
7	2.44	11	2.32							7
8	2.37	11	2.25							8
9	2.28	11	2.18							9
10	2.23	11	2.12							10
11	2.22	10	1.92							11
12	2.13	10 S	1.84							12
13	2.09	10	1.81							13
14	2.07	10	1.78							14
15	2.05	10	1.77							15
16	2.04	10	1.76							16
17	2.02	10	1.75							17
18	1.99	10	1.72							18
19	2.01	12 S	2.08							19
20	2.04	11	1.94							20
21	2.11	11	2.01							21
22	2.61	17	3.83							22
23	2.97	18	4.82							23
24	3.17	18	5.20							24
25	3.30	16	4.42							25
26	3.33	15	4.32							26
27	3.64 B	11	2.61							27
28	3.32 B	10	1.83							28
29	3.30 B	13	2.68							29
30	3.28 B	12	2.34							30
31	3.26 B	11	2.17							31
TOTAL	78.30		87.82							TOTAL

B - ICE CONDITIONS

S - SAMPLE(S) COLLECTED THIS DAY

ALBERTA

SWAN RIVER NEAR KINUSO - STATION NO. 07BJ001

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)		SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 05	11:20	1.0	5.46	B	28.0	DH59	57	144														
APR 06	11:45	3.0	6.84	W	28.0	DH59	77															
APR 07	08:05	1.0	7.76	W	28.0	DH59	101															
APR 08	08:15	0.0	8.63		28.0	DH59	94															
APR 09	08:22	2.0	8.72		28.0	DH59	84															
APR 10	08:15	4.0	9.25		28.0	DH59	85															
APR 11	18:20	8.0	11.3		28.0	DH59	143															
APR 12	12:00	5.0	12.5		28.0	DH59	144	138														
APR 13	07:40	5.0	15.2		28.0	DH59	271															
APR 13	14:40	8.0	13.7		28.0	DH59	202															
APR 14	07:45	5.0	15.4		28.0	DH59	237															
APR 15	08:00	7.0	22.5		28.0	DH59	407															
APR 16	09:45	5.0	45.4		28.0	DH59	1170	104	12	16	27	38	55	72	84	97			38	55	15
APR 17	08:30	4.0	49.3		28.0	DH59	1000	89	13	14	25	33	50	66	84	96			34	52	14
APR 18	08:35	4.0	36.6		28.0	DH59	844															
APR 18	13:00	5.0	35.6		28.0	DH59	817															
APR 19	18:00	4.0	33.2		28.0	DH59	843															
APR 20	08:00	3.0	40.8		28.0	DH59	1240	90	04	08	08	13	18	32	51	80	98		78	18	4
APR 21	07:45	3.0	46.1		28.0	DH59	742	85	10	13	18	24	30	39	80	91	99		61	26	13
APR 22	08:10	5.0	41.2		28.0	DH59	701	100	04	07	10	16	22	32	47	90	99		86	28	7
APR 23	10:15	6.0	36.6		28.0	DH59	480															
APR 24	08:25	5.0	37.4		28.0	DH59	532															
APR 25	09:45	5.0	32.4		28.0	DH59	501															
APR 25	12:07	6.0	31.6		28.0	DH59	552															
APR 26	11:24	7.0	27.8		28.0	DH59	355															
APR 27	17:56	10.0	23.8		28.0	DH59	243															
APR 28	18:50	11.0	27.4		28.0	DH59	386															
APR 29	10:37	10.0	30.3		28.0	DH59	554	98														
APR 30	19:15	7.0	32.4		28.0	DH59	515															
MAY 01	09:30	8.0	28.0		28.0	DH59	324															
MAY 02	18:38	8.0	31.1		28.0	DH59	176															
MAY 03	19:25	7.0	17.0		28.0	DH59	135															
MAY 04	18:24	10.0	16.0		28.0	DH59	120															
MAY 05	18:20	9.0	15.1		28.0	DH59	87															
MAY 06	08:40	8.0	14.1		28.0	DH59	83	107														
MAY 07	18:17	13.0	13.7		28.0	DH59	68															
MAY 08	19:19	13.0	13.5		28.0	DH59	68															
MAY 09	18:50	14.0	13.8		28.0	DH59	71															
MAY 10	19:10	12.0	14.8		28.0	DH59	112															
MAY 11	10:20	14.0	14.8		28.0	DH59	107	109														
MAY 12	12:48	17.0	13.8		28.0	DH59	88															
MAY 13	10:15	16.0	13.0		28.0	DH59	71															
MAY 14	15:28	13.0	16.7		28.0	DH59	215															
MAY 15	12:01	8.0	83.3		28.0	DH59	2380	138	17	33	37	46	63	78	88	96			33	65	33
MAY 17	12:45	13.0	36.6		28.0	DH59	388															
MAY 18	14:15	12.0	26.2		28.0	DH59	233															
MAY 19	16:40	13.0	19.9		28.0	DH59	187															
MAY 20	11:30	13.0	17.5		28.0	DH59	95															
MAY 21	13:35	14.0	14.6		28.0	DH59	82															
MAY 22	20:35	17.0	12.6		28.0	DH59	42	125														
MAY 23	17:55	18.0	11.8		28.0	DH59	38															
MAY 24	18:52	18.0	14.4		28.0	DH59	63															
MAY 25	18:48	17.0	13.7		28.0	DH59	86															
MAY 27	18:15	18.0	9.88		28.0	DH59	28															
MAY 28	18:13	17.0	9.35		28.0	DH59	28	137														
MAY 29	08:52	16.0	8.84		28.0	DH59	23															
MAY 30	14:15	16.0	13.0		28.0	DH59	127															
MAY 31	11:02	13.0	30.2		28.0	DH59	551	141	15	20	33	38	47	66	88	91	99		44	39	20
JUN 01	10:40	14.0	22.0		28.0	DH59	248															
JUN 02	12:03	13.0	18.7		28.0	DH59	186															
JUN 03	11:05	12.0	20.8		28.0	DH59	148															
JUN 03	15:52	17.0	19.8		28.0	DH59	170															
JUN 04	17:28	17.0	15.0		28.0	DH59	101															
JUN 05	15:14	16.0	13.0		28.0	DH59	93	126														
JUN 06	18:40	16.0	12.3		28.0	DH59	88															
JUN 07	19:05	16.0	12.1		28.0	DH59	71															
JUN 08	09:30	17.0	11.8		28.0	DH59	53															
JUN 08	14:10	16.0	57.0		28.0	DH59	2040	135	01	04	06	08	17	34	57	87	99		66	30	4
JUN 10	14:55	11.0	204		28.0	DH59	2760	153	13	18	30	38	55	78	91	96			22	60	18
JUN 11	14:00	11.0	107		28.0	DH59	1400	107	10	14	22	29	45	64	86	96			41	44	15
JUN 12	15:02	11.0	130		28.0	DH59	1230	108	11	15	23	29	43	59	83	96			39	48	13
JUN 13	18:17	12.0	74.8		28.0	DH59	711	105	10	13	22	28	44	61	86	96			41	44	15
JUN 14	10:35	12.0	58.0		28.0	DH59	574	104	08	12	21	27	46	61	82	97			39	48	13
JUN 14	17:02	15.0	52.3		28.0	DH59	524	107	05	10	20	28	42	59	82	97			39	49	12
JUN 15	15:27	15.0	37.4		28.0	DH59	331	103	13	17	28	36	54	71	90	96			41	49	10
JUN 16	15:15	15.0	28.8		28.0	DH59	219															
JUN 17	12:09	15.0	24.4		28.0	DH59	189															
JUN 18	10:09	12.0	27.7		28.0	DH59	232															
JUN 18	12:15	15.0	28.4		28.0	DH59	250															
JUN 20	13:03	14.0	21.1		28.0	DH59	136															
JUN 21	19:43	17.0	15.5		28.0	DH59	76															
JUN 22	12:28	15.0	14.6		28.0	DH59	82	131														
JUN 23	13:10	15.0	13.1		28.0	DH59	64															
JUN 24	10:46	17.0	13.4		28.0	DH59	86															
JUN 25	11:31	17.0	14.8		28.0	DH59	89															
JUN 25	17:48	21.0	11.9		28.0	DH59	52															
JUN 26	08:35	15.0	13.1		28.0	DH59	66															
JUN 26	11:15	15.0	13.3		28.0	DH59	56															
JUN 28	08:01	15.0	14.4		28.0	DH59	101	128														
JUN 30	15:33	15.0	20.5		28.0	DH59	190															
JUL 01	13:08	20.0	26.3		28.0	DH59	332															
JUL 02	15:30	20.0	15.7		28.0	DH59	280															
JUL 03	18:14	15.0	13.7		28.0	DH59	78	118														
JUL 04	13:10	15.0	16.8		28.0	DH59	124															
JUL 05	14:27	17.0	16.5		28.0	DH59	98															
JUL 08	17:00	13.0	334		28.0	843	2770	183	17	28	37	44	61	83	96				17	67	26
JUL 09	11:45	13.0	151		28.0	DH59	2280	137	16	20	29	37	53	78					22	58	20
JUL 11	12:00	18.5	81.8		28.0	DH59	880	132	20	24	36	43	63	85	97				15	61	24
JUL 11	17:00	18.0	57.0		28.0	DH59	573	137	17	25	36	44	65	84	97				16	58	26
JUL 12	18:20	17.0	47.4		28.0	DH59	434	127	23	27	37	46	66	86	96				12	61	27
JUL 13	18:10	16.0	181		28.0	DH59	1890	143	20	23	35	42	61	80	94	99			20	58	22

NOTE : SINGLE VERTICAL LOCATED AT 28.0 METRES FOR 1988

DISCHARGE SYMBOL(S): B - ICE CONDITIONS W - DAILY MEAN; ICE CONDITIONS

CONTINUED

SWAN RIVER NEAR KINUSO - STATION NO. 07BJ001(CONTINUED)

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m^3/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	PERCENT SILT	PERCENT CLAY
JUL 14	12:15	13.0	103	38.0	DH59	1000	121	17	23	38	63	82	81	86	99				15	86	23
JUL 14	17:24	15.0	89.2	38.0	DH59	818	102	16	31	32	46	66	74	80	88				26	83	31
JUL 15	10:02	16.0	85.2	38.0	DH59	658	112	15	28	37	47	65	83	94	99				16	69	26
JUL 16	10:10	17.0	38.1	38.0	DH59	363															
JUL 17	08:29	15.0	32.9	38.0	DH59	259															
JUL 18	07:45	15.0	37.0	38.0	DH59	202															
JUL 18	14:05	18.0	35.7	38.0	DH59	188															
JUL 19	10:10	18.0	32.9	38.0	DH59	136															
JUL 20	07:34	18.0	21.8	38.0	DH59	134															
JUL 21	10:12	22.0	17.4	38.0	DH59	95															
JUL 22	08:22	19.0	15.8	38.0	DH59	87	135														
JUL 23	10:03	16.0	13.1	38.0	DH59	68															
JUL 24	08:28	12.0	12.3	38.0	DH59	62															
JUL 25	08:50	18.0	11.0	38.0	DH59	60															
JUL 26	10:40	21.0	9.53	38.0	DH59	40															
JUL 27	11:35	20.0	8.77	38.0	DH59	33															
JUL 28	08:15	17.0	7.89	38.0	DH59	30															
JUL 29	08:35	18.0	7.50	38.0	DH59	33	177														
JUL 30	08:15	17.0	7.47	38.0	DH59	34															
JUL 31	08:10	15.0	7.43	38.0	DH59	29															
AUG 03	12:15	20.0	5.84	38.0	DH59	16															
AUG 08	08:41	15.0	5.05	38.0	DH59	22	181														
AUG 09	08:20	15.0	5.80	38.0	DH61	20															
AUG 12	17:10	20.0	4.81	38.0	DH59	27	182														
AUG 15	11:40	17.0	4.25	38.0	DH59	19															
AUG 18	08:20	17.0	7.44	38.0	DH59	32															
AUG 21	14:45	16.0	10.6	38.0	DH59	87	182														
AUG 24	09:10	15.0	9.89	38.0	DH59	148															
AUG 26	11:25	16.0	5.85	38.0	DH59	29															
AUG 27	13:12	17.0	5.07	38.0	DH59	28	189														
AUG 30	11:55	15.0	3.78	38.0	DH59	30															
SEP 02	03:20	16.0	3.17	38.0	DH59	12															
SEP 05	10:45	18.0	2.38	38.0	DH59	11	187														
SEP 08	11:45	11.0	2.34	38.0	DH59	11															
SEP 11	08:20	10.0	3.23	38.0	DH59	37	188														
SEP 14	08:50	14.0	2.84	38.0	DH59	10															
SEP 21	08:45	8.0	2.70	38.0	DH59	10	194														
SEP 28	11:40	7.0	3.28	38.0	DH59	10	178														
SEP 28	10:30	8.0	3.84	38.0	DH59	21	181														
OCT 05	12:10	8.0	2.67	38.0	DH59	12	183														
OCT 12	08:55	8.0	2.13	38.0	DH59	10	186														
OCT 19	14:35	6.0	2.02	38.0	DH59	12	187														

NOTE : SINGLE VERTICAL LOCATED AT 38.0 METRES FOR 1988

SWAN RIVER NEAR KINUSO - STATION NO. 07BJ001

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)	SUMMARY : APR-OCT MEAN LOAD (TONNES)	SUMMARY : APR-OCT HISTORICAL MEAN LOAD (TONNES)	SUMMARY : APR-OCT STANDARD ERROR OF MEAN %
1969	---PCCCCCC--	MANUAL	2 280	SEP 05	5	JUN 30	31 300	SEP 05	70 400	---	---	---
1970	--CCCCCCCCCC	MANUAL	2 190	JUN 29	6	AUG 28	35 000	JUN 28	183 000	851	851	---
1971	CCCCCCCCCCCC	MANUAL	3 470	JUN 16	5	AUG 29	72 500	JUL 04	748 000	3 490	2 170	80.6
1972	CCCCCCCCCCC	MANUAL	4 450	JUN 16	5	DEC 19	70 000	JUN 16	400 000	1 870	2 070	37.1
1973	CCCCCCCCCCC	MANUAL	3 370	MAY 21	5	SEP 23	41 800	MAY 21	344 000	1 810	1 880	28.3
1974	CCCCCCCCCCC	MANUAL	5 080	JUL 13	10	SEP 27	103 000	JUL 13	516 000	3 430	2 050	21.5
1975	---CCCCCCC--	MANUAL	4 020	AUG 31	10	OCT 29	86 700	JUN 28	544 000	2 540	2 130	17.3
1976	---PPPP-PP--	MANUAL	1 240	JUL 03	32	OCT 06	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	801	APR 25	8	OCT 27	---	---	---	---	---	---
1978	---P-PP-PP--	MANUAL	1 310	APR 27	18	OCT 26	---	---	---	---	---	---
1979	---CCCCCC---	MANUAL	6 010	JUN 14 *	14	AUG 27	140 000	JUN 14	884 000 *	---	---	---
1980	-P-CCCCCCC--	MANUAL	1 600	JUN 05	22	JUN 18	21 700	MAY 26	151 000	705	1 930	19.3
1981	---P-CCCCC--	MANUAL	2 180	JUL 23	6	AUG 26	18 500	JUL 23	58 200	---	---	---
1982	---PCCCCCC--	MANUAL	3 240	JUL 18	1	OCT 23 *	35 000	JUL 18	268 000	---	---	---
1983	---PCCCCCC--	MANUAL	4 590	JUN 30	7	JUN 04	157 000	JUN 25 *	663 000	---	---	---
1984	--PCCCCCCP--	MANUAL	3 650	JUN 8	14	AUG 3	72 400	JUN 06	248 000	---	---	---
1985	---PCCCCCC--	MANUAL	3 800	MAY 4	7	AUG 2	50 300	JUN 25	305 000	---	---	---
1986	---PCCCCCC--	MANUAL	2 550	JUL 15	10	SEP 8	95 400	JUL 15	532 000	---	---	---
1987	---PCCCCCC--	MANUAL	2 280	AUG 1	8	OCT 25	14 900	AUG 01	88 700	---	---	---
1988	---CCCCCCC--	MANUAL	2 780	JUN 10	10	SEP 14	183 000	JUL 07	631 000	2 480	2 000	16.5

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

ALBERTA

WATERTON RIVER NEAR GLENWOOD - STATION NO. 05AD026

LOCATION: LAT 49 38 38 N LONG 113 28 10 W
DRAINAGE AREA: 1 830 km²
TYPE OF FLOW: REGULATED SINCE 1966
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
MAR 22	09:02	3.0	1.38	10LB K	DIP	5	267														
MAY 03	12:45	11.0	1.08	23.0 X	DIP	8	218														
MAY 31	09:45	11.0	3.27	20.0 X	DH48	21	198														
JUN 29	13:55	16.0	2.20	18.0 X	DH48	53	191														
JUL 30	10:03	17.0	2.60	21.0 X	DH48	15	169														
AUG 23	08:10	12.0	1.60	8.0 X	DH48	10	172														
SEP 28	14:19	15.0	1.38	10LB K	DIP	4															
NOV 03	13:20	8.0	1.59	19.0 X	DH48	4	191														

NOTE : SINGLE VERTICAL IS UNDETERMINED FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

WATERTON RIVER NEAR GLENWOOD - STATION NO. 05AD026

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	------P-PP--	MANUAL	6 JUL 24		1 OCT 08		---	---	---	---	---	---
1975	----PPP-PPP-	MANUAL	124 MAY 13		0 SEP 03	*	---	---	---	---	---	---
1976	---PPPPPPP--	MANUAL	43 APR 14		4 JUL 29		---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	29 OCT 18		2 APR 26		---	---	---	---	---	---
1978	---PPPPPP-P-	MANUAL	1 130 MAY 17	*	3 NOV 02		---	---	---	---	---	---
1979	---PPPPPPP--	MANUAL	113 MAY 30		0 JUL 28		---	---	---	---	---	---
1980	--PPPPP-PPP-	MANUAL	156 MAY 05		3 JUL 31		---	---	---	---	---	---
1981	--PPPPPPP-P-	MANUAL	233 MAY 27		3 AUG 24		---	---	---	---	---	---
1982	---PPPPPP---	MANUAL	42 JUN 23		1 AUG 26		---	---	---	---	---	---
1983	---PPPPPP-P-	MANUAL	151 MAY 30		4 JUL 26		---	---	---	---	---	---
1984	--PPPPPP----	MANUAL	36 JUN 26		3 MAY 1		---	---	---	---	---	---
1985	---PPPPPPP--	MANUAL	53 MAY 28		2 MAY 1		---	---	---	---	---	---
1986	--PPPPPP--P-	MANUAL	149 JUN 2		1 JUN 26		---	---	---	---	---	---
1987	--PPPPPPP-P-	MANUAL	126 APR 8		1 JUN 23		---	---	---	---	---	---
1988	--P-PPPPP-P-	MANUAL	83 JUN 29		4 SEP 28		---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH

* - EXTREME FOR PERIOD OF RECORD

WEST PRAIRIE RIVER NEAR HIGH PRAIRIE - STATION NO. 07BF002

LOCATION: LAT 55 28 50 N LONG 116 28 30 W
DRAINAGE AREA: 1 180 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1986

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 14	11:50	5.0	5.15	MID	X	DIP	354															
APR 22	11:40	8.0	8.72	MID	X	DH59	428	123														
MAY 20	09:25		5.09	20.0	K	DH59	224	128														
JUN 11	11:15	13.0	46.1	20.0		DH59	3910	170	17	28	37	48	63	77	83	95	100			23	51	26
JUN 20	13:15	17.0	7.45	18.0	K	DH48	302	155														
JUL 08	17:15	15.0	132	20.0		DH59	5080	215	15	25	36	45	62	78	91	95	100			21	54	25
JUL 14	11:55	16.0	78.9	20.0		DH59	4570	183	12	18	24	30	42	57	70	89	99	100		43	41	16
JUL 20	13:15	22.0	7.41	14.0	K	DH48	185	188														
AUG 24	10:50	15.0	0.912	11.0	K	DH48	13	280														
SEP 29	11:15	11.0	0.395	4.8	X	DH48	8	286														

NOTE : SINGLE VERTICAL LOCATED AT 20 METRES FOR 1986

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

WEST PRAIRIE RIVER NEAR HIGH PRAIRIE - STATION NO. 07BF002

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1974	---PP--P-P--	MANUAL	3 280	APR 23	13	AUG 28	---	---	---	---	---	---
1975	---PPP-PP---	MANUAL	1 830	APR 26	22	SEP 28	---	---	---	---	---	---
1976	---PPPPPPP--	MANUAL	4 830	JUN 27	47	OCT 28	---	---	---	---	---	---
1977	---PPPPPPP--	MANUAL	2 430	APR 13	15	SEP 21	---	---	---	---	---	---
1978	-------PPPP--	MANUAL	78	SEP 27	13	AUG 28	---	---	---	---	---	---
1979	---PPPPPP---	MANUAL	4 280	JUL 04	28	SEP 19	---	---	---	---	---	---
1980	----PPPPPP--	MANUAL	341	JUN 03	19	OCT 27	---	---	---	---	---	---
1981	----P-P-----	MANUAL	253	MAY 27	10	JUL 07	---	---	---	---	---	---
1982	---PP-P-PP--	MANUAL	1 280	MAY 03	40	OCT 04	---	---	---	---	---	---
1983	---P-PPPPP--	MANUAL	8 600	JUL 26 *	33	OCT 24	---	---	---	---	---	---
1984	---PPPP-P---	MANUAL	5 730	JUN 9	7	SEP 4	---	---	---	---	---	---
1985	---PPPPPP---	MANUAL	2 140	MAY 8	6	JUL 25 *	---	---	---	---	---	---
1986	---PPPPPPP--	MANUAL	2 320	APR 22	8	AUG 25	---	---	---	---	---	---
1987	---PPP-PPP--	MANUAL	308	APR 22	13	SEP 28	---	---	---	---	---	---
1988	---PPPPPP---	MANUAL	5 050	JUL 8	8	SEP 28	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

WILLOW CREEK ABOVE CHAIN LAKES - STATION NO. 05AB024

LOCATION: LAT 50 11 47 N LONG 114 12 48 W
DRAINAGE AREA: 182 km²
TYPE OF FLOW: NATURAL
TYPE OF GAUGE: RECORDING

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE SAMPLING VERTICAL (m)		TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 27	07:30	3.0	0.380	3.0	K	DH48	13	213														
MAY 31	08:30	9.0	0.644	4.0	K	DH48	18	223														
JUN 24	08:00	17.0	0.255	2.2	K	DH48	5	208														
JUL 28	10:50	20.0	0.014	7.0	K	DH48	3	202														
AUG 30	11:45	17.0	0.028	8.0	X	DIP	3															
SEP 27	08:35	7.0	0.084	3.2	K	DH48	7	264														
NOV 02	08:00	2.0	0.069	3.4	X	DH48	71	204														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL,FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

ALBERTA

WILLOW CREEK ABOVE CHAIN LAKES - STATION NO. 05AB026

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		TOTAL FOR PERIOD (TONNES)	SUMMARY : JAN-DEC MEAN LOAD (TONNES)	HISTORICAL MEAN LOAD (TONNES)	STANDARD ERROR OF MEAN %
1965	-----CCCCC--	MANUAL	1 690	JUN 17	1	AUG 18	2 230	JUN 18	5 410	---	---	---
1966	--CCCCCCCCCC	MANUAL	1 400.	JUN 04	1	JUL 27	873	JUN 05	2 330	---	---	---
1967	CCCCCCCCCCCC	MANUAL	1 350	MAY 21	2	AUG 01	7 180	MAY 31 *	30 800 *	84.6	84.6	---
1968	CCCCCCCCCCCC	MANUAL	180	APR 01	1	JUL 17	84.4	JUN 07	588	1.60	43.1	86.3
1969	CCCCCCCCCCCC	MANUAL	2 080	JUN 29 *	0	JUL 24 *	4 880	JUN 29	18 700	51.3	45.8	82.7
1970	CCCCCCCCCCCC	MANUAL	1 780	MAY 05	0	SEP 17	801	MAY 05	3 300	9.04	38.8	82.8
1971	CCCCCCCCCCCC	MANUAL	178	JUN 05	0	JUN 22	180	JUN 05	658	1.80	30.7	85.7
1972	CCCCCCCCCCCC	MANUAL	81	MAY 15	0	JUN 21	68.8	MAY 14	1 130	3.09	25.2	86.4
1973	CCCCCCCCCCCC	MANUAL	384	MAY 25	0	NOV 18	340	MAY 25	1 280	3.41	22.1	86.2
1974	CCCCCCCCCCCC	MANUAL	255	APR 28	0	JAN 21	374	APR 27	1 710	4.87	19.9	85.1
1975	CCCCCCCCCCCC	MANUAL	1 390	JUN 20	1	JAN 06	4 820	JUN 20	5 930	24.5	20.4	47.8
1976	CCCCCCCCCCCC	MANUAL	880	AUG 05	0	SEP 20.	1 180	AUG 05	3 880	8.13	19.2	46.8
1977	CCCCCCCCCCCC	MANUAL	28	APR 05	1	JUN 12	2.31	APR 05	48.8	0.13	17.5	48.3
1978	PPPPPPPPPP--	MANUAL	40	MAR 17	0	JAN 03	---	---	---	---	---	---
1980	---PPPPPP-P-	MANUAL	28	MAY 28	4	AUG 28	---	---	---	---	---	---
1981	--P-PP-PPP--	MANUAL	413	MAY 22	4	SEP 02	---	---	---	---	---	---
1982	---PPPP-P---	MANUAL	44	JUN 07	1	SEP 14	---	---	---	---	---	---
1983	---PPPPP-P--	MANUAL	40	MAY 25	2	JUL 19	---	---	---	---	---	---
1984	---PPPP------	MANUAL	28	APR 5	1	MAY 1	---	---	---	---	---	---
1985	----PPPPPP--	MANUAL	31	JUL 11	2	MAY 1	---	---	---	---	---	---
1986	---PPPPPP---	MANUAL	82	MAY 22	3	APR 1	---	---	---	---	---	---
1987	---P-PPPP-P-	MANUAL	31	JUL 20	3	AUG 31	---	---	---	---	---	---
1988	---PPPPPP-P-	MANUAL	71	NOV 2	3	JUL 28	---	---	---	---	---	---

MANUAL - MANUAL SAMPLING

C - COMPLETE MONTH P - PARTIAL MONTH * - EXTREME FOR PERIOD OF RECORD

WILLOW CREEK NEAR CLARESHOLM - STATION NO. 05AB021

LOCATION: LAT 50 01 05 N LONG 113 42 50 W
DRAINAGE AREA: 1 180 km²
TYPE OF FLOW: REGULATED SINCE 1966
TYPE OF GAUGE: MANUAL

INSTANTANEOUS SUSPENDED SEDIMENT FOR 1988

DATE	TIME	WATER TEMP. (°C)	INSTANT. DISCHARGE (m³/s)	SINGLE VERTICAL SAMPLING (m)	TYPE OF SAMPLER	INSTANT. CONCENT. (mg/L)	DISSOLVED SOLIDS (mg/L)	PERCENT FINER THAN INDICATED SIZE, IN MILLIMETRES .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	PERCENT SAND	SILT	CLAY
APR 13	13:05	10.0	0.510	3.8 X	DH48	18	224														
APR 26	13:00	10.0	0.462	3.5 X	DH48	36	246														
MAY 31	14:15	14.0	0.240	3.0 X	DH48	13	261														
JUN 27	08:00	25.0	0.059	3.1 X	DH48	12	234														
JUL 26	14:00	32.0	0.083	MID	DH48	5	209														
AUG 22	08:10	18.0	0.250	4.0 X	DH48	7	209														
SEP 27	13:50	10.0	0.126	1.8 X	DH48	30	234														
NOV 02	13:40	4.0	0.485	3.3 X	DH48	7	287														

NOTE : SINGLE VERTICAL LOCATED AT MID (MID STREAM) FOR 1988

VERTICAL SYMBOL(S): K - NOT AT REGULAR SINGLE SAMPLING VERTICAL, FROM LEFT BANK
X - NOT AT REGULAR SINGLE SAMPLE VERTICAL

WILLOW CREEK NEAR CLARESHOLM - STATION NO. 05AB021

HISTORICAL SEDIMENT DATA SUMMARY

YEAR	PERIOD OF OPERATION SUMMARY (JFMAMJJASOND)	TYPE OF SAMPLING	SAMPLED CONCENTRATION MAXIMUM (mg/L)		SAMPLED CONCENTRATION MINIMUM (mg/L)		SUSPENDED SEDIMENT LOAD MAXIMUM DAILY (TONNES)		SUSPENDED SEDIMENT LOAD TOTAL FOR PERIOD (TONNES)		SUMMARY : JAN-DEC MEAN LOAD (TONNES)	SUMMARY : JAN-DEC HISTORICAL MEAN LOAD (TONNES)	SUMMARY : JAN-DEC STANDARD ERROR OF MEAN %
1984	---CCCCCCCCC	MANUAL	3 150	MAY 05	13	OCT 16	7 800	MAY 07	59 100		---	---	---
1985	CCCCCCCCCCCC	MANUAL	3 050	JUN 18	3	SEP 17	9 880	JUN 18	37 000		73.5	73.9	---
1986	CCCCCCCCCCCC	MANUAL	2 280	JUN 05	4	AUG 28	5 580	JUN 05	23 400		65.2	69.6	6.3
1987	CCCCCCCCCCCC	MANUAL	4 450	MAY 31	8	SEP 22	31 300	MAY 31	139 000		361	173	60.0
1988	CCCCCCCCCCCC	MANUAL	937	JUN 12	5	AUG 30	537	JUN 08	3 820		9.69	132	63.7
1989	CCCCCCCCCCCC	MANUAL	4 540	JUN 25	0	SEP 28 *	40 800	JUN 30 *	215 000 *		881	224	60.2
1970	CCCCCCCCCCCC	MANUAL	2 880	JUN 14	0	OCT 23	* 12 300	JUN 14	38 000		78.8	200	47.5
1971	CCCCCCCCCCCC	MANUAL	1 030	JUN 07	2	NOV 01	3 030	JUN 07	10 200		27.9	175	48.0
1972	CCCCCCCCCCCC	MANUAL	2 080	MAR 11	0	OCT 02	5 880	MAY 28	44 100		121	188	43.5
1973	CCCCCCCCCCCC	MANUAL	778	MAY 27	1	OCT 05	2 080	MAY 27	10 200		27.6	153	43.3
1974	CCCCCCCCCCCC	MANUAL	2 410	MAY 01	1	OCT 16	5 540	MAY 01	36 700		100	148	40.2
1975	PPPPPPPPPPPP	MANUAL	5 210	JUN 20 *	5	JAN 06	---	---	---		---	---	---
1976	---PPPPPPP-P-	MANUAL	288	AUG 12	4	NOV 03	---	---	---		---	---	---
1977	---PPPPPPP---	MANUAL	19	APR 13	1	OCT 31	---	---	---		---	---	---
1978	---PPPPPPP---	MANUAL	784	MAR 28	3	OCT 30	---	---	---		---	---	---
1979	---PPPPPPP---	MANUAL	121	MAY 28	0	AUG 20	---	---	---		---	---	---
1980	---PPPPP-P-P-	MANUAL	167	APR 14	6	JUL 28	---	---	---		---	---	---
1981	---PPPPPPP---	MANUAL	1 870	MAY 23	5	OCT 26	---	---	---		---	---	---
1982	---PPPPPP---	MANUAL	130	APR 23	8	SEP 27	---	---	---		---	---	---
1983	-----PP-PPP---	MANUAL	28	JUN 24	4	OCT 31	---	---	---		---	---	---
1984	---PP-PP------	MANUAL	8	JUL 30	3	JUN 25	---	---	---		---	---	---
1985	-----P-PPP-P-	MANUAL	12	MAY 31	3	NOV 1	---	---	---		---	---	---
1986	---PPPPPP-P-	MANUAL	185	MAY 1	3	SEP 9	---	---	---		---	---	---
1987	---PPPPPP-P-	MANUAL	43	APR 8	5	JUN 22	---	---	---		---	---	---
1988	---PPPPPP-P-	MANUAL	38	APR 28	5	JUL 28	---	---	---		---	---	---

MANUAL - MANUAL SAMPLING

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